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POLIOMYELITIS IN CHOSEN (KOREA).

The following information in regard to the prevalence of poliomyelitis in Chosen (Korea) was received from the American consul general at Seoul, under date of May 26, 1917.

No definite history of epidemic poliomyelitis in Chosen is available. Reports from physicians resident in five localities for periods of from 5 to 21 years indicate that no acute case of the disease occurred in their practice. Cases of poliomyelitis have been reported by Provinces as follows:

Heian Nando.—Three cases examined at hospital and one case examined by the public physician in Shukusen district.

Kankyo Hokudo.—One case treated in hospital in February, 1915.

Kankyo Nando.—Two cases occurring in persons 11 and 39 years old, respectively. Both cases were treated in hospital, 1 in 1915 and 1 in 1916.

Keikido.—Twenty-two cases have been reported, of which 2 were treated, in 1915, 6 in 1916, and 2 in 1917 to date of report (May 26, 1917). These cases were treated in the Government hospital and at other points in Seoul. The remaining 12 cases were reported at Songdo, the former capital of Chosen, 25 miles distant from Seoul. The patients were for the most part between the ages of 1 and 5 years. The character of the disease was light.

Keisho Hokudo.—Number of cases reported, 17, occurring in persons between the ages of 2 and 22 years. Paralysis of lower limbs was present.

Keisho Nando.—Seven cases reported, of which 4 were treated in 1916 and 3 in 1917. No special area of prevalence in the Province was indicated.

Kogendo.—Three cases reported in Kanjo district.

Zenra Nando.—Three cases present at date of report, the ages of the patients being between 2 and 5 years. Paralysis of the lower limbs was noted.

THE MALARIA PARASITE IN THE MOSQUITO.

THE EFFECTS OF LOW TEMPERATURE AND OTHER FACTORS ON ITS DEVELOPMENT.

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In accounting for the geographic distribution of malarial fever early investigators realized that temperature was an important factor. Following the incrimination of the mosquito as the carrier of malarial parasites, writers on the epidemiology of the disease were of the opinion that thermic conditions were in part responsible for the infection. The influence of temperature on the developmental cycle of the malarial parasites was fully recognized by the Italian workers, and their first experiments to establish the insect rôle took this important correlation into consideration.

Historical.

Bastianelli and Bignami (1899)¹ in experiments with 50 specimens of *Anopheles maculipennis* and *Plasmodium falciparum* attempted to transmit the infection at a low room temperature, 18° to 22° C. During a period of 20 days these mosquitoes when dissected showed only forms of early development. When they were removed to a temperature of 30° C. for two days or more, however, sporozoites developed. "Evidently at a temperature of 18° to 22° C. the life cycle of the parasite (*Plasmodium falciparum*) is completed very slowly."

Marchiafava and Bignami (1900)² noticed that the temperature exerted a certain influence upon the time necessary for the completion of the cycle. At a temperature of 20° to 22° C. the development was found to be much slower in estivo-autumnal malaria and it appeared from their observations that development did not occur at all at 14° to 15° C.

Giles (1902)³ writes relative to geographic distribution, "It is a long-established fact that the northern limit of malaria corresponds roughly with the summer maximum isotherm of 76° F., or, according to Hirsch, to a mean summer temperature of 15° to 16° C. (60° F.), which is much the same thing. Recent Italian researches show that the development of the hæmosporidia within the mosquito can not take place at a lower temperature than 20° C. (68° F.), or at a higher temperature than 30° C. (86° F.), and in the existence of this upper limit we find an explanation of the fact that the hot dry weather in northern India, where for months together the temperature falls

¹ Bastianelli, G. and Bignami, A. (1899). Sullo sviluppo dei parassiti della terzana nell' *Anopheles claviger*. Bull. d. R. Accad. Med. di Roma, Anno 25 Fasc. 3, Apr. 19. Quoted from Craig. The malarial fevers. 1909. Wm. Wood & Co., New York, p. 88.

² Marchiafava, E., and Bignami, A. (1900). Malaria. Twentieth century practice. Wm. Wood & Co., New York, p. 88.

³ Giles, G. M. (1902). A handbook of the gnats or mosquitoes. Second edition. John Bales Sons & Danielsson, London, pp. 161-162.

rarely as low as this, is, in spite of the unbearable heat, by far the healthiest season of the year, and during it, primary cases of malaria are practically unknown."

Braun (1906)¹ states that the development of the sporonts in mosquitoes is dependent on the atmospheric temperature and the species of parasite; that the *Plasmodium* of the malignant tertian completes its development within eight days at a temperature of 28° to 30° C.; below 18° C. the development ceases.

Stephens (1908)² quotes Grassi by stating that the sporogonic developmental cycle requires, in the case of the malignant tertian parasite, an optimum temperature of about 27° C. and ceases at such lower temperatures as 15.5° to 17.5° C. In the case of the simple tertian, however, provided a suitable initial temperature has been maintained, development will still go on at temperatures as low as 12° or 9° C. But the appearance of sporozoites is then delayed for 21 days. Further, the lowest temperature at which the simple tertian parasite will develop in the mosquito is 20° to 22° C. and in the case of the quartan parasite, 16.5° C.

Craig (1909)³ writes: "We know that the malarial plasmodia will undergo development only in stomachs of mosquitoes living under proper conditions as regards temperature, it having been proved by Jansco that the oocysts develop best at a temperature of between 20° and 30° C., while if the temperature be lower than 16° C. the organisms perish."

Ross (1910)⁴ in accounting for the number of ingested sexual parasites which reach maturity and develop protospores (sporozoites) asserts that it depends among other things upon temperature. He agrees with Jansco, who finds that the zygotes develop best at 24° to 30° C., temperatures above and below these limits retarding the process; and that they die if the mosquito is kept constantly below 16° C. after feeding. On the other hand, Ross finds that they often continue to grow if the mosquito carrier is subjected merely to an intermittent low temperature.

Howard, Dyar, and Knab (1912)⁵ discussing the incubation period of the sporogonic cycle as influenced by temperature, state that the most favorable temperature lies between 22° and 28° C. and beyond these conditions the development of the parasite goes forward more slowly, "and there are observations which show a period of more than 50 days."

¹ Braun, M. (1906). The animal parasites of man. Third edition. Bale Sons & Danielsson, London, p. 98.

² Stephens, I. W. W. (1908). Malaria in its relation to the mosquito. Nothnagel's Encyclopedia of Practical Medicine. Saunders Co., Philadelphia and London, pp. 129-130.

³ Craig, C. F. (1909). The malarial fevers. Wm. Wood & Co., New York, p. 109.

⁴ Ross, R. (1910). The prevention of malaria. John Murray, London, pp. 87-88.

⁵ Howard, L. O., Dyar, H. G., and Knab, F. (1912). The mosquitoes of North and Central America. The Carnegie Institution of Washington, Vol. I, p. 194.

Castellani and Chalmers (1913)¹ write that the results of experiments tend to show that temperature has most effect upon the ookinete before it pierces the wall of the stomach of the mosquito and becomes encysted; and that it would appear that if the temperature is below 15° to 16° C. no further development of the oocyst will take place in any form.

Hindle (1914)² writes, "At lower temperatures the development is very much prolonged, and consequently the mosquito does not become infective until after a much longer incubation period."

Walker and Barber (1914)³ in the Philippines found that during the warm season *Anopheles* could be infected with sporozoites of *P. falciparum* in 12 days, while in the cool season sporozoites appeared to require from 13 to 15 days to develop.

Grassi⁴ was probably the first among the early investigators of the etiology of malaria to appreciate the correlation of the influence of temperature on the development of the exogenous cycle with the seasonal variation of endemic malaria. The epidemiological significance of temperature relations was brought early to his notice when he attempted unsuccessfully to produce infection in mosquitoes held at 14° to 15° C. in the first hours after biting. Infection resulted under the same conditions at a temperature of 20° to 22° C. Following the extension of these observations, in a series of carefully controlled experiments, Grassi came to the following conclusions:

1. The development of the tertian and subtertian parasites can not be produced at temperatures varying from 15.5° to 17.5° C., but after the development of the parasites in the insect's midgut has begun, the temperature can without jeopardy be lowered to 9° to 11° C.

2. The tertian parasite in the *Anopheles* will develop at a temperature at which subtertian crescents will not develop.

3. The important epidemiological factor of the effect of low temperature during the first hours after biting is ascribed to the fact that exflagellation and fertilization are not produced at these low temperatures. After these phenomena take place and the ookinete is formed mature development ensues, even in the presence of low temperatures.

4. The minimum temperature for exflagellation of crescents was established at 17° C., although at this temperature exflagellation is by no means frequent. At 18° to 20° C. exflagellation is certain.

¹ Castellani, A., and Chalmers, A. J. (1913). Manual of tropical medicine. Wm. Wood & Co., New York, p. 855.

² Hindle, E. (1914). Flies and disease. The blood sucking flies. Cambridge University Press, Cambridge, England.

³ Walker, E. L., and Barber, M. A. (1914). Malaria in the Philippines. The Philippine Journal of Science, Vol. IX, No. 5, sec. B., September, 1914.

⁴ Grassi, B. (1901). Die malaria. Studien eines zoologen. Jena. Quoted from Jansco.

5. The minimum temperatures for development of the various sporogonic types of parasites were established as 16.5° for quartan, 17.5° for tertian, and 18° C. for subtertian.

These findings of Grassi have been confirmed by the several authors whose work is detailed in the table presented later.

Jansco (1904)¹ repeated the experiments of Grassi and coworkers with essentially different results. Grassi's conclusion that temperatures under 16° C. during the first hours after biting prevent the formation of oocysts on account of the inhibited fertilization of macrogametes is held as untenable by Jansco. The latter's experiments indicated that fertilization occurred even under 16.0° C., not under artificial conditions on a glass slide, but in the stomach of the anopheline where the blood is supposed not to cool so quickly. Experiments showed that *Anopheles* became infected with tertian and subtertian gametes when kept from the moment of biting for 24 hours at a temperature of 11° to 13° C. and then exposed to a temperature between 20° to 30° C. However, when maintained at the original low temperature, infection did not result. Jansco concluded that greater importance should be attached to that stage in which the blood is already digested and the ookinetes are in the act of penetrating the gut epithelium than to the first hours after biting.

The essential principle in the difference in results obtained by Jansco and Grassi may be ascribed to their interpretation of the *critical temperature* involved. Grassi holds the *critical temperature* to be that immediately after biting—the temperature favoring fertilization; Jansco establishes the *critical temperature* as that favoring penetration of the ookinete preliminary to cyst formation.

The following table summarizes the experiments of these investigators:

TABLE NO. 1.—Details of experiments of various authors relative to low temperature and development in the mosquito.

Author.	Experiment No.	Type of malaria.	Initial temperature.	Time held.	Second temperature.	Time held.	Results.
Grassi.....	1	Tertian. Subtertian with <i>A. claviger</i> .	15.5-17.5.... °C.	Immediately after biting.	..... °C.	.....	No development.
	2	Tertian. Subtertian.	Sufficient for ookinete formation.	After ookinete formation.	11.9	Indefinite.	Developed normally.
	3	Quartan....	.....do.....	.....do.....	16.5	.....do.....	Do.
	4	Subtertian..	18 and above	Immediately after biting	.....	.....	Full development.
	5	Tertian....	17.5 and above.	.....do.....	.....	.....	Do.
	6	Quartan....	16.5 and above.	.....do.....	.....	.....	Do.

¹ Jansco, N. (1904). Zur Frage der Infection der *Anopheles claviger* mit Malariaparasiten bei niedriger Temperatur. Centralbl. f. Bakt. Vol. XXXVI, p. 624.

TABLE NO. 1.—Details of experiments of various authors relative to low temperature and development in the mosquito—Continued.

Author	Ex- peri- ment No.	Type of malaria.	Initial temperature,	Time held.	Second tempera- ture.	Time held.	Results.
			^{° C.}		^{° C.}		
Van der Scheer and Van Ber- lekom.	1	Tertian.	14.5-16.5.	do.			Negative.
	2	do.	18-21.5.	do.			4 out of 5 be- came infect- ed.
Martirano.	1	Subtertian.	17 and below	do.		Several hours.	Negative.
	2	do.	18.	do.		25-30 min- utes.	Development observed.
	3	do.	18-20.	do.		20-30 min- utes.	Crescents (changed to round bod- ies).
Schoo.	1	Tertian.	15.	do.		12 days.	Negative.
	2	do.	18.	do.		18 days.	Oocysts ma- ture.
	3	do.	Sufficient for oocyst forma- tion.	do.		10 days.	Do.

TABLE NO. 1A.—Details of temperature experiments of Jansco.

Ex- peri- ment No.	Type of malaria.	Ini- tial tem- pera- ture.	Time held.	Sec- ond tem- pera- ture.	Time held.	Third tem- pera- ture.	Time held.	Results.
		^{° C.}		^{° C.}		^{° C.}		
1	Subtertian.	31	30 min	13	7 hours.	30	4 days 16½ hours.	2 of 4 mosquitoes with oocyst, size 17 μ.
2	Subtertian with <i>A. claviger.</i>	31	30 min	13	22 hours.	24	5 days 21½ hours.	2 of 6 mosquitoes with numer- ous oocysts 6-8 μ in size.
3	do.	30	30 min	11	6 hours.	30	5 days 17½ hours.	4 of 10 mosquitoes with oocysts 22-28 μ.
4	do.	30	30 min	11	8 hours.	30	5 days 15½ hours.	1 of 6 mosquitoes found in- fected.
5	do.	11	8 hours	30	10 days.			1 with oocysts to size of 44 μ.
6	do.	11-13	10 days					None infected (13 used).
7	do.	30	10 days					8 of 12 infected.
8	do.	13	2 hours	22	4 days.			1 of 5 infected with oocysts 6-9 μ.
9	do.	30	4 days.					1 of 8 infected.
10	do.	13	22 hrs.	22	24 hours.	1 22	9 days 14 hours.	2 of 4 mosquitoes infected—1 with 1 oocyst (sporoblast), 1 with 12 oocysts, size 30 μ.
11	do.	30	2 days.	8	5 days.	30	5 days.	5—all negative.
12	do.	30	12 days					3 of 7 infected.
13	do.	21	4 days.	8	4 days.	20	3 days.	1 with 40-50 oocysts 7-9 μ in size.
14	do.					28	5 days.	Several infected with oocysts up to 11 μ in size; some ookinete found unchanged.
15	Tertian with <i>A. claviger.</i>	11	22 hrs.	21	5 days.			The single mosquito used found with 6 oocysts 7 μ in size.
16	do.	13	4 days.	22	10 days.			7 negative.
17	do.	13	14 days.					9 negative.
18	do.	20	14 days					26 out of 40 infected.

¹ After holding 12 hours at 16°.² After holding 3 days at 20°.

In analyzing the results of temperature experiments, it is apparent that no cognizance is taken of the lack of sporozoite development either in oocysts or in gland cells at low temperatures. This may be

due to the fact that the infected mosquitoes have not been kept alive long enough to permit the development of mature forms, or the workers may have assumed that the presence of oocysts up to the development of sporoblasts was sufficient evidence of the infectibility of the mosquito.

In this connection, the epidemiological application of the experiments of Jansco and Grassi is open to question, as the exposure of anopheline mosquitoes to a change of temperature of 8 to 22° C. immediately after engorgement could not be expected to occur under natural conditions.

The writer has attempted to extend the low temperature experiments of previous writers in order to determine what changes occur in the malarial parasite within the body of the mosquito during the period of hibernation under natural conditions. Mosquitoes were kept at living room temperature during 10 to 13 days following the initial gametocyte bearing blood meal. They were then subjected gradually to outdoor winter temperature (New Orleans) in a large cage protected from wind and rain. They were removed from time to time in order to permit them to obtain a blood meal from rabbits kept for this purpose.

The specimens were laboratory-bred anophelines kept individually in commodious lantern chimneys fastened at both ends with bobinet held by tape and rubber bands. Moisture was provided in the gauze pad in a tray in which four of the cages were placed on end and raisins were placed on the upper ends during the intervals of blood feeding. As many as three bites were taken by each mosquito when applied to the patient and subsequently a rabbit was employed to supply blood to increase the longevity of the mosquitoes. It was observed that blood was taken more readily when the raisin diet was withheld.

A gradual adaptation to low temperature was attempted by the following precautions:

The mosquitoes after biting were kept in the room with the patient for several hours, then transferred to a living room for the period stated during which time the temperature was maintained at 20° to 26° C. At this time the outdoor temperature being much lower, the specimens were retained for several days in the low-temperature incubator regulated through the use of ice and electricity, at 15° to 18° C. Then the outdoor cage was used, the temperature being recorded as shown in table No. 2.

The following table represents the temperature and humidity to which the mosquitoes were exposed in the outdoor cage during the period of the experiment, November 1 to January 11.

TABLE No. 2.—Record of daily temperatures and average relative humidity Nov. 1, 1916, to Jan. 15, 1917.

Date.	November.				December.				January.			
	Maxi- mum.	Mini- mum.	Mean.	Hu- mid- ity.	Maxi- mum.	Mini- mum.	Mean.	Hu- mid- ity.	Maxi- mum.	Mini- mum.	Mean.	Hu- mid- ity.
	° C.	° C.	° C.		° C.	° C.	° C.		° C.	° C.	° C.	
1.....	27	19	23	64.5	21	9.5	15.5	70	25	18	21.5	88
2.....	28.5	17.5	23	48	23	10.5	16.5	80.5	27	10	18.5	84.7
3.....	28	18	23	54.5	24	15	19.5	84.5	28	20.5	24.2	78
4.....	28.5	19	23	76	28	19	23.5	84.5	29	21	25	81
5.....	28	19	23	84.5	27	19	23	87.5	20	17	18.5	65.3
6.....	27	17	22	91.5	26.5	18	22	96.5	17	11	14	51
7.....	28	19.5	24	89	26	19.5	23	95.5	18.5	12	15.2	58.7
8.....	29.5	20.5	25	89	25	9	17	88.5	22	13.5	17.2	59
9.....	28	19	23.5	88.5	11.5	5	8	63	25.5	16.5	21	78
10.....	21	18	20.5	84.5	15.5	6.5	10.5	79	27	21	24	60
11.....	27	18	23	85.5	16	9	13	75.5	13	9	11	43.7
12.....	28.5	19.5	24	95	11.5	3	7	63.5	18	7.5	13.2	66.3
13.....	28.5	21	25	93.5	16.5	7	12	74	24	16.5	20.2	82.7
14.....	22.5	6	14.5	77	22.5	10.5	16.5	85.5	11	3.5	7.2	69.3
15.....	12	3	7	52	10.5	2.5	6.5	75.5	11	7	9	93.3
16.....	13.5	4	8.5	55.5	17	5	10.5	67.5				
17.....	20.5	7	13.5	75	19.5	11.5	15.5	97				
18.....	18	10.5	14	56	20.5	6.5	13	71				
19.....	22	10.5	16.5	78	15.5	4	9.5	83				
20.....	25	13	18	83	28.5	16	22	91.5				
21.....	27	16	21	86	24	6	15.5	89				
22.....	27.5	17.5	22.5	87	10.5	2.5	6.5	71.5				
23.....	19.5	13	16.5	72.5	17	5	10.5	93				
24.....	17.5	10.5	14.5	61.5	22.5	13	17.5	97				
25.....	15	7	10.5	64	22	15.5	18	99.5				
26.....	17	7	12	72.5	26.5	19	23	94.5				
27.....	19	13	15.5	87	27	23.5	25	94				
28.....	27	16	21	93	24.5	20.5	22.5	94.5				
29.....	25	15.5	19.5	95.5	20.5	17	18	96.5				
30.....	21	15	18	84	20.5	15	17.5	87				
31.....					19.5	16.5	18	97				
Monthly averages....	24	14.5	18.5	77.5	20.5	11.5	16	84.7	21	14.9	17.3	70.6

In order to determine the effect of transferring to much higher temperatures, at the close of the experiment 8 specimens were removed from the outside cage and placed in the room incubator, which, during the two weeks of the test, registered 20° to 32° C., with a mean temperature of 24.6° C. The mosquitoes were dissected at intervals with the following results: Two of the 8 specimens were found infected. One of the infected mosquitoes was found with 2 empty oocysts shrunk and ruptured and containing only granules of residual protoplasm. The glands proved negative. The infection of the other specimen was represented by empty oocyst capsules, apparently full sized, devoid of contents except for a few sporoblast-like bodies in one oocyst. The glands were not infected in this specimen.

The results of subjecting mosquitoes to low temperatures after feeding are detailed in the following table:

TABLE No. 3.

Specimen No.	Number of bites.	Date of dissection.	Days of development.	Result.	Specimen No.	Number of bites.	Date of dissection.	Days of development.	Result.
1.....	2	Nov. 15	13	Positive.	28.....	1	Dec. 9	30	Negative.
2.....	2	Nov. 17	15	Negative.	29.....	3	Dec. 10	38	Do.
3.....	2	..dq.	15	Do.	30.....	3	Dec. 12	40	Do.
4.....	2	Nov. 18	15	Positive.	31.....	3	..do.	40	Do.
5.....	3	..do.	18	Negative.	32.....	1	Dec. 14	35	Do.
6.....	2	..do.	16	Do.	33.....	3	Dec. 17	46	Do.
7.....	3	Nov. 19	17	Positive.	34.....	1	Dec. 21	34	Do.
8.....	3	Nov. 20	18	Negative.	35.....	3	Dec. 22	52	Do.
9.....	3	..do.	20	Positive.	36.....	2	Dec. 24	53	Do.
10.....	1	Nov. 22	10	Negative.	37.....	1	..do.	37	Positive.
11.....	1	..do.	5	Do.	38.....	3	Dec. 25	53	Do.
12.....	2	..do.	20	Do.	39.....	1	Dec. 26	47	Do.
13.....	3	Nov. 23	23	Do.	40.....	1	Dec. 28	41	Negative.
14.....	1	Nov. 25	8	Do.	41.....	3	Dec. 29	57	Positive.
15.....	3	..do.	25	Positive.	42.....	3	Dec. 30	58	Negative.
16.....	3	Nov. 28	26	Negative.	43.....	1	Dec. 31	44	Do.
17.....	2	Nov. 29	27	Do.	44.....	2	Jan. 1	59	Positive.
18.....	3	Dec. 1	29	Do.	45.....	1	..do.	45	Negative.
19.....	2	Dec. 2	30	Do.	46.....	1	Jan. 3	47	Positive.
20.....	3	Dec. 3	31	Positive.	47.....	1	Jan. 4	48	Negative.
21.....	3	..do.	31	Do.	48.....	2	..do.	62	Do.
22.....	3	..do.	33	Do.	49.....	1	..do.	48	Positive.
23.....	3	Dec. 4	32	Negative.	50.....	1	Jan. 5	49	Negative.
24.....	3	..do.	32	Do.	51.....	3	Jan. 11	70	Do.
25.....	2	Dec. 5	33	Do.	52.....	2	..do.	69	Do.
26.....	2	Dec. 8	35	Do.	53.....	2	..do.	70	Do.
27.....	3	..do.	36	Do.	54.....	2	..do.	70	Do.

A total of 15 infections resulted among 54 specimens of *Anopheles punctipennis* fed 10 to 70 days previously on blood containing many subtertian gametocytes. The resulting infections are described in the following table:

TABLE No. 4.

Date of dissection.	Days of development.	Stage of development.
Nov. 15	13	8 oocysts without protoplasmic differentiation, size approximately 25μ to 28μ .
Nov. 18	15	Approximately 250 oocysts in all stages preceding the sporoblastic.
Nov. 19	17	8 oocysts, 2 of which still retaining pigment, remainder granular without sporoblasts.
Nov. 20	19	Approximately 200 oocysts in all stages up to sporoblastic.
Nov. 25	24	143 oocysts, size 25μ to 40μ mostly with malarial pigment, few with sporoblasts.
Dec. 3	31	About 120 oocysts, half of them retaining pigment, only one with sporoblasts.
Do.	31	Approximately 250 oocysts, of which 50 were quite small (15μ to 20μ), with malarial pigment, remainder various sizes but more matured. Few with sporoblasts.
Do.	32	30 oocysts in various stages, a few with immature sporoblasts.
Dec. 24	37	One oocyst represented by shrunken capsule without contents, oocyst apparently full > sized and firmly attached to gut wall.
Dec. 25	53	5 oocysts—4 with contents expelled, 1 with sporoblast development barely commencing (only 4 segments discernible). Remainder of body of oocyst undifferentiated and granular. Size 30μ by 33μ .
Dec. 26	47	3 oocysts with contents ruptured, all torn from gut wall during dissection. No evidence of sporozoites in mounting liquid surrounding the gut wall or in the glands.
Dec. 29	57	2 ruptured shrunken oocyst membranes on posterior end of midgut. No indications of sporoblasts or sporozoites.
1917.		
Jan. 1	59	1 oocyst 22μ to 25μ containing granules only. Also 4 ruptured oocyst capsules still attached to stomach wall, no sporozoites present.
Jan. 3	47	23 oocysts, the majority of which were large, size up to 65μ ; 2 bodies still retained small amount of pigment; 1 very small (about 20μ). Remainder 21 oocysts of the usual sort with undifferentiated protoplasm except that 3 of them were developed to sporoblast stage. Not any of them contained sporozoites. One empty shrunken capsule was seen. Midlobe of each gland parasitized with a moderate number of sporozoite-like filaments (nonmotile) and did not stain with Giemsa.
Jan. 4	48	Infection represented only by two empty oocyst shells attached to gut wall. No sporozoites on gut or in glands.

The eight control specimens of *A. quadrimaculatus* yielded 4 infections as follows: One specimen of *A. quadrimaculatus* which proved infected was examined on the 12th day after biting the blood donor. The gut wall was covered by probably at least 200 oocysts. These were not over 35μ in size, the majority exhibiting malarial pigment and averaging 20μ to 25μ in size. No mature oocysts were seen, and the glands were devoid of sporozoites.

The second control *A. quadrimaculatus* found infected was examined 40 days after its bite of the blood donor. On the gut wall of this specimen were seen 3 oocysts and 3 shrunken capsules devoid of sporozoites or other contents. The oocysts measured 59μ to 67μ in size with undifferentiated granules lacking evidence of sporoblast development. A prolonged search was made of the mounting fluid surrounding the gut wall but sporozoites were not found. The six lobes of the salivary glands were likewise uninfected.

Another specimen of *A. quadrimaculatus* was found infected on the 40th day of development. Here were seen three empty oocyst capsules and three large oocysts, one of which measured 59μ by 65μ and the other two were as much as 67μ in diameter. The development of these oocysts was apparently abortive as sporoblasts were absent and sporozoites were not present in the mounting fluid about the stomach wall or in the six gland lobes.

The fourth specimen of this species found to be infected was dissected 54 days after its initial blood meal. The only indication of its infection was the presence of two apparently full-sized oocyst envelopes devoid of contents except for a few residual sporoblast-like bodies in one of them. The glands were negative except for a moderate invasion of sporozoites in the midlobe of one gland.

The single specimen of *A. quadrimaculatus* in which sporozoite development was demonstrated had been kept at room temperature (gas heated, mean temperature of approximately $22^{\circ}\text{C}.$). The other three specimens were subjected to the same conditions of temperature and humidity as the specimens of *A. punctipennis*.

The mosquitoes employed in these experiments were allowed a maximum period of 70 days in which to produce gland sporozoites. Only one of the series kept at low temperatures showed bodies which resembled sporozoites, but because of their peculiar character and unusual behavior their identity is questionable. These bodies, found in a specimen of *A. punctipennis* after an interval of 47 days following a single infective bite, were of the usual filamentous type, of normal size but with no appearance of nuclei. Only the two mid lobes of the glands contained a moderate number of the filaments. None of the oocysts invading the stomach wall contained filaments, although sporoblasts were seen in 3 of the 23 oocysts, the majority of which were of mature size. The salivary glands of this mosquito

were given a prolonged study, but no evidence of the characteristic writhing movement or other sign of viability was observed in the spindle forms present. Slight warming to 30° C. caused no change in the material placed in normal saline, and when the gland cells were ruptured by pressure and macerated, no activity followed. When stained with Giemsa solution, the bodies smeared from the glands did not take the stain so as to be recognizable.

The contents of the salivary glands of two other specimens were also suspected on account of the presence of sporozoite-like bodies, but in these instances one could feel fairly confident that they were only the peculiar threadlike crystals described by Stephens as artifacts.

Factors Other Than Temperature Influencing Parasitism.

It has been shown that other factors besides temperature may influence infectivity, but aside from the degree of parasitism in the human host and the number of gametocytes ingested by the mosquito, little is known.

Daniels (1901)¹ emphasizes the fact that infection is directly dependent on the number of bites the mosquito takes from the patient and has shown that the infection varies from 26 per cent to 66 per cent, depending on the number of times the mosquitoes were permitted to bite the gametocyte carrier. He reported 27 infected mosquitoes of 57 applied, distributed as follows:

Number of bites.	Percentage infected.
1.....	26
2.....	46
3.....	62
4.....	66

In the work presented here analogous results were obtained. The percentage of infections was proportional to the number of bites the insects took. In the following table 19 mosquitoes of two species are accounted for in relation to the number of infective bites obtained from the human host, a subtertian case:

TABLE NO. 5.

	Number of times fed.	Number of mosquitoes.	Number positive.	Percentage positive.
<i>A. punctipennis</i>	1	32	4	12.5
Do.....	2	16	3	18.8
Do.....	3	23	8	34.8
<i>A. quadrimaculatus</i>	1	5	1	20.0
Do.....	2	4	2	50.0
Do.....	3	1	1	100.0

¹ Daniels, C. W. (1901), Malaria. British Medical Journal. Jan. 26. Cited by Dendrck, W. H. (1911), A practical study of malaria. Saunders Co., Philadelphia and London. p. 70.

The elimination of gametes through digestive activity of the mosquito may be considered another factor, relative especially to the loss of infection in certain *Anopheles*, and is discussed because it has been ignored or overlooked heretofore.

Darling (1910)¹ has ingeniously accounted for the failure of infection in the mosquito host to the extent of 97 per cent mainly through the phenomenon of phagocytosis. He concludes that the gametocytes accruing from three successive blood meals are retained by the insect and that the fertilized gametes, if they do not become phagocytized have abundant time to wander out of the blood clot and reach the gut wall.

In addition to this, one must take into account the peculiar habit of the mosquito to "clear" itself, by discharging blood per anum during and for some time following a blood meal. It should be considered as an important source of gametocyte elimination. This means of limiting the number of zygotes is demonstrated in the finding of as many as 12 crescents in a single field of the bloody dejecta. This process takes place at the time most opportune—before fertilization and subsequent encystment of parasites. The early excretions—during perhaps the first 24 hours—are the most important in this regard, as the clearing process is a mechanical one and the phenomenon of exflagellation does not get an opportunity to establish itself. To be sure, this elimination process requires 1 to 5 days or more for completion, depending on the temperature. Later defecations are associated with normal degenerative changes, so that this elimination is not significant after the early hours of biting.

In a study of the contents of excreted blood numerous crescents have been encountered possibly just as relatively abundant as, or more so than, those contained in the peripheral blood of the human host. The forms seen are similar to those in the patient's blood except that in addition to deformed crescents, many fragmentary bodies suggestive of active phagocytosis or changes due to insect alimentation are commonly seen. A series of counts made of stained films of this excreted material, taken from 10 to 30 minutes after the mosquitoes had bitten, indicated that the crescents were somewhat concentrated. There were present 87 crescents to each 100 leucocytes, while in the blood film taken previously to the biting, 63 crescents per 100 leucocytes were counted.

A true valuation of this observation could be obtained only in careful weighings of mosquitoes at various stages after biting, and in blood counts and estimations such as Darling has employed in his studies.

Concentration of the gametes in the dejecta, if it does occur, may be tentatively explained by the rise of these bodies in the same way

¹ Darling, S. T. (1910), Studies in relation to malaria. Bulletin Isthmian Canal Commission Press.

that the crescents rise when a tube of infected blood is centrifuged in Bass and Johns' (1915)¹ method of concentrating the parasites for diagnostic and cultural purposes. These workers discovered that when blood containing crescents was centrifuged the parasites rose to the top of the cell column so that a mass of almost pure crescents could be thus obtained. The alimentary canal of the mosquito may be compared to a centrifuged tube in which the blood is agitated through the processes of biting and subsequent peristalsis. It is suggested that the action may be aided by the raising of the caudal end of the abdomen which is done by the anopheline in biting and resting.

This theory may be further strengthened by the fact, observed by all investigators of the mosquito cycle, that there is a decided concentration of oocysts on the gut wall toward the anal end. Especially is this the case when only few oocysts are present. We may presume that the developed bodies appear in this location on account of the presence of the greatest number of gametes at the distal end of the gut.

Interpretation of Results and Summary.

In the work presented here it is indicated that development of the exogenous elements in the mosquito is restricted or prevented during an intermittent low temperature even when temperatures favorable to parasite development are present in the early stages and subsequently.

That the presence of even great numbers of oocysts in various stages does not give assurance of subsequent maturity and infectivity is evidenced in these experiments.

Of the 18 infected *Anophelines* kept at low temperature only one appeared to give rise to mature parasites, while the one control specimen of *A. quadrimaculatus* retained at room temperature reached normal maturity relative to sporozoite development. *Plasmodium falciparum* was the species of parasite used.

The oocyst stage was maintained up to 59 days in the mosquitoes employed in these experiments. A peculiar appearance of these bodies gave the impression that development would not be carried to maturity even if at this period mosquitoes were exposed to salubrious temperatures. Sporozoites were not produced in eight mosquitoes of this series which had been exposed as much as 60 days to intermittent low temperature, then transferred to an optimum temperature for two weeks longer. Two of the eight mosquitoes proved to be infected by only a variable number of shrunken and ruptured oocyst capsules.

¹ Bass, C. C., and Johns, F. M. (1915). A method of concentrating malaria plasmodia for diagnostic and other purposes. Am. Jour. of Trop. Dis. and Prev. Med., Vol. III, No. 5, November, pp. 298-303.

A suggestion of the mode of evolution in the growth and subsequent degeneration of the bodies found in the mosquitoes may be given as follows:

The nature of the oocyst throughout the incubation period was such as to indicate that development was practically negligible after about 19 days and up to 59 days. Taking as an illustration the development produced in a mosquito during 47 days of incubation, we find bodies indistinguishable in morphology and size from similar bodies seen in mosquitoes during 13 to 19 days of development.

Even up to 31 days the presence of malarial pigment could be demonstrated in numerous oocysts. This of course may be interpreted as aborted development brought about by low temperatures. Also up to this time (31 days) few sporoblasts were seen among the oocysts encountered, possibly another influence of low temperature. Beginning with the thirty-seventh day it was found that oocysts commenced to degenerate, rupturing prior to sporozoite development. Numerous ruptured oocysts were seen up to the fifty-ninth day, and not in a single instance was the presence of sporozoites revealed. During this interval many oocyst capsules were found unattached to the gut wall, probably having been dislodged in the process of dissection.

The absence of sporozoites, with one exception, in the 18 specimens infected is significant. In the one exception it is to be noted that the presence of sporozoites is open to question on account of the uncharacteristic form and behavior of the bodies seen.

The loss of infectivity through temperature change is significant in relation to hibernation of infected mosquitoes. Much can be explained if it should be definitely proved that low temperature prevents sporozoite development in mosquitoes inactive during the winter.

It is indicated in the results of these experiments that an intermittent low temperature does interfere with sporozoite formation; consequently it is explicable that mosquitoes procuring gametocyte bearing blood before winter sets in, may become sterile or innocuous during the hibernation period.

The writer has obtained a partial confirmation of the results of Daniels in the relation of infection to the number of bites which the mosquitoes obtain. Fifteen examples of *A. punctipennis* gave the following results relative to infection with the parasites of malaria: One, two and three bites gave 12.5, 18.8 and 34.8 per cent respectively. The results obtained with 4 specimens of *A. quadrimaculatus* were 20, 50, and 100 per cent relative to one, two, and three bites obtained.

Another factor besides low temperature which possibly influences infectivity was found to be the loss of gametocytes through the

"clearing process" in the mosquito. This is indicated in the blood count of the mosquitoes' dejecta, in which numerous crescents were found. In one instance blood from the human host yielded 63 crescents to 100 leucocytes and in the blood after passing through the mosquito 87 crescents to 100 leucocytes were counted.

Addendum.

In a recent paper King (1917),¹ working in New Orleans, has shown some interesting results relative to low temperature influence on the sporogonic development. He shows that the parasite of tertian malaria in *Anopheles quadrimaculatus* is able to survive exposure to a temperature of 30° F. for a period of 2 days, 31° F. for 4 days, 45° to 69° F. for 6 to 7 days, and in two mosquitoes 38° to 59° F. for 17 days. In a smaller series of tests the sporonts of *P. falciparum* showed a resistance to 35° to 57° F. for 1 to 2 days.

In these experiments the parasites in the mosquito were permitted to develop during 7 to 23 days at room temperature before the insects were exposed to temperatures of 29° to 69° F. for periods ranging from 1 to 16 days, following which they were maintained at room temperature for an additional period of 1 to 19 days.

It is indicated from these tests that exposure to low temperatures, for a limited period at least, did not affect the viability of sporozoites assuming that provision had been made for the mosquitoes to develop sporozoites at room temperature.

¹ King, W. V. (1917), The effect of cold upon malaria parasites in the mosquito host. *The Journal of Experimental Medicine*, Vol. XXV. No. 3, March, pp. 495-498.

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

UNITED STATES.

CURRENT STATE SUMMARIES.

California Report for the Week Ended August 25, 1917.

The California State Board of Health reported that during the week ended August 25, 1917, there were few changes in the prevalence of communicable diseases in the State of California. The reporting of venereal diseases has been stimulated by the new bureau of venereal disease in the State department of health. Fifty-eight cases of gonococcus infection were reported during the week. Forty-one cases of typhoid fever were notified, scattered throughout the State. One case of poliomyelitis was notified in Yuba County, one case of smallpox in Oakland, and one case in San Francisco.

The details of notifiable disease cases reported during the week ended August 18 are as follows:

	Cases.		Cases.
Anthrax.....	2	Pneumonia.....	15
Chicken pox.....	13	Poliomyelitis.....	3
Diphtheria.....	26	Rocky Mountain spotted fever.....	2
Dysentery.....	1	Scarlet fever.....	35
Erysipelas.....	2	Smallpox.....	5
German measles.....	29	Syphilis.....	18
Gonococcus infection.....	34	Tetanus.....	1
Malaria.....	17	Tuberculosis.....	135
Measles.....	38	Typhoid fever.....	39
Mumps.....	33	Whooping cough.....	33

RECIPROCAL NOTIFICATION.

Minnesota.

Cases of communicable diseases referred during July, 1917, to other State health departments by department of health of the State of Minnesota.

Disease and locality of notification.	Referred to health authority of—	Why referred.
Diphtheria: Minneapolis Health Department, Hennepin County. St. Paul Bureau of Health, Ramsey County.	Webster, Burnett County, Wis..... Phillips, Price County, Wis.....	Patient came from Wisconsin sick, to consult Minneapolis physician. Culture from mother positive after she had left for Wisconsin, her child having died of diphtheria at City Hospital, St. Paul.

Cases of communicable diseases referred during July, 1917, to other State health departments by department of health of the State of Minnesota—Continued.

Disease and locality of notification.	Referred to health authority of—	Why referred.
Measles: Minneapolis City, Hennepin County.	LeMars, Plymouth County, Iowa; Herman, Washington County, Nebr.	Working in Nebraska, came to Minneapolis broken out with measles; stopped off at LeMars, Iowa, 10 hours.
Scarlet fever: Savage Village, Scott County.	Lake Mills, Winnebago County, Iowa.....	Mother and 2 children exposed to scarlet fever in Minnesota; went to Iowa.
Smallpox: London Township, Freeborn County.	Hartford, Hartford County, Conn.....	Left Minnesota for Connecticut after extensive exposure to smallpox; vaccination history unknown.
Minneapolis Health Department, Hennepin County.	Mobridge, Walworth County, S. Dak.....	Case developed smallpox in Minneapolis. Contracted while visiting daughter in South Dakota, who also had smallpox.
Tuberculosis: Mayo Clinic, Rochester, Olmstead County.	Chicago, Cook County, Ill.; Little York, Warren County, Ill.; Toledo, Tama County, Iowa; Orange City, Sioux County, Iowa; Conrad, Grundy County, Iowa; Dubuque, Dubuque County, Iowa (2 cases); Shell Rock, Butler County, Iowa; Fort Dodge, Webster County, Iowa; Escanaba, Delta County, Mich.; Nevada, Vernon County, Mo.; Conrad, Teton County, Mont.; Palisade, Hitchcock County, Nebr.; Devils Lake, Ramsey County, N. Dak.; Kermit, Divide County, N. Dak.; Wing, Burleigh County, N. Dak.; Shawnee, Pottawatomie County, Okla.; Herrick, Gregory County, S. Dak.; Wellette, Spink County, S. Dak.; Florence, Codington County, S. Dak.; Deerfield, Dane County, Wis.; Camduff, Saskatchewan, Canada. Sanitary district not given, Saskatchewan, Canada.	4 advanced, 14 moderately advanced, 3 apparently arrested, 2 diagnosis not given; cases left Mayo Clinic for homes.
Pokegama Sanatorium, Fine County.	Belgrade, Gallatin County, Mont.; Hayward, Sawyer County, Wis.	1 death, 1 open case discharged from Pokegama Sanatorium.
Thomas Hospital, Minneapolis, Hennepin County.	Hatton, Traft County, N. Dak.; Dresser, Polk County, Wis.	2 open cases left Thomas Hospital for homes.
Minneapolis Health Department, Hennepin County.	Spring Brook, Williams County, N. Dak..	Sputum examined while visiting in Minnesota; positive; patient returned to North Dakota.
St. Paul Bureau of Health, Ramsey County.	Grantsburg, Burnett County, Wis.....	Open case left City Hospital, St. Paul, for home in Wisconsin.
Typhoid fever: Starbuck village, Pope County.	Bancroft, Kossuth County, Iowa.....	Suspected typhoid carrier from Iowa visiting in Minnesota.
Minneapolis Health Department, Hennepin County.	Conde, Spink County, S. Dak.....	Patient from South Dakota died of typhoid fever at St. Barnabas Hospital, Minneapolis.

ANTHRAX.

Kansas—Hutchinson.

During the month of July a case of anthrax was notified in Hutchinson, Reno County, Kans. The patient was a Mexican employed in a railroad camp.

ANTHRAX—Continued.

Louisiana Report for July, 1917.

During the month of July, 1917, six cases of anthrax were reported in the State of Louisiana.

Maryland—Harney.

A case of anthrax was notified at Harney, Carroll County, Md., August 13, 1917. The patient was taken ill August 10. It is believed that the infection was acquired while handling boards on which the carcass of a hog had lain.

CEREBROSPINAL MENINGITIS.

Minnesota—Fort Snelling.

During the week ended August 25, 1917, a case of cerebrospinal meningitis was reported at Fort Snelling, Minn.

State Reports for July, 1917.

Place.	New cases reported.	Place.	New cases reported.
California:		Louisiana:	
Alameda County.....	1	E. Feliciana Parish.....	1
Oakland.....	1	Livingston Parish.....	1
Los Angeles County—		Total.....	2
Whittier.....	1		
Placer County.....	1	Minnesota:	
San Diego County.....	1	Carlton County—	1
San Diego.....	17	Moose Lake.....	
San Francisco.....	5	Chippewa County—	
Ventura County.....	1	Lonetree Township.....	1
Total.....	28	Crow Wing County—	
		Riverton.....	1
Connecticut:		Fairfield Township.....	1
Fairfield County—		Freeborn County—	
Bridgeport.....	4	Albert Lea Township.....	1
Hartford County—		Hennepin County—	
Hartford.....	2	Minneapolis.....	2
New Britain.....	1	Koochiehling County—	
Plainville.....	1	Rat Root Township.....	1
New Haven County—		Ramsey County—	
Cheshire.....	1	St. Paul.....	3
New Haven.....	2	St. Louis County—	
Orange.....	1	Duluth.....	1
Total.....	12	Sherburne County—	
		Haven Township.....	1
Iowa:		Total.....	13
Des Moines County.....	1		
Kansas:		Montana:	
Crawford County—		Silverbow County.....	1
Pittsburg.....	1		
Elk County—		New Jersey:	
Leeds (R. D.).....	1	Essex County.....	9
Harvey County—		Hudson County.....	3
Newton.....	1	Passaic County.....	2
Montgomery County—		Union County.....	3
Independence.....	1	Total.....	17
Sumner County—			
Wellington.....	1	South Carolina:	
Wyandotte County—		York County.....	1
Kansas City.....	3		
Total.....	8	South Dakota:	
		Charles Mix County.....	1

CEREBROSPINAL MENINGITIS—Continued.

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	1	.....	Manchester, N. H.....	1	1
Allentown, Pa.....	1	1	Milwaukee, Wis.....	1	1
Baltimore, Md.....	4	.....	Muscatine, Iowa.....	1	1
Boston, Mass.....	5	3	Newark, N. J.....	3	.....
Bridgeport, Conn.....	1	1	New York, N. Y.....	2	1
Buffalo, N. Y.....	1	.....	Norfolk, Va.....	.....	1
Chelsea, Mass.....	.....	1	Orange, N. J.....	.....	1
Chicago, Ill.....	9	8	Philadelphia, Pa.....	4	1
Cleveland, Ohio.....	1	.....	Pittsburgh, Pa.....	.....	3
Dayton, Ohio.....	.....	2	Pittsfield, Mass.....	1	.....
Detroit, Mich.....	.....	1	St. Louis, Mo.....	1	1
Indianapolis, Ind.....	1	.....	San Diego, Cal.....	1	.....
Kalamazoo, Mich.....	1	.....	San Francisco, Cal.....	1	.....
Kansas City, Kans.....	1	.....	Stockton, Cal.....	1	1
Kansas City, Mo.....	1	.....		

DIPHTHERIA.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1433.

DYSENTERY.

Kentucky—War Creek.

An outbreak of dysentery was reported August 25, 1917, at War Creek, Breathitt County, Ky. Sixteen deaths occurred between August 1 and 25, and 5 new cases were notified August 24.

Massachusetts.

A report dated August 24, 1917, states that there had been an outbreak of dysentery in the Grafton State Hospital, 45 cases having occurred in the Worcester department, with three deaths, and 30 cases in the Grafton colony. With the exception of the three cases which proved fatal, all recovered rapidly and without difficulty. Laboratory examinations of fecal specimens from several of the more typical cases proved absence both of amebæ and also of any of the known strains of *bacilli dysenteriae*.

ERYSIPELAS.

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Boston, Mass.....	.....	2	Passaic, N. J.....	2	.....
Chicago, Ill.....	5	1	Philadelphia, Pa.....	1	.....
Cincinnati, Ohio.....	1	.....	Pittsburgh, Pa.....	3	.....
Cleveland, Ohio.....	1	1	Plainfield, N. J.....	1	.....
Duluth, Minn.....	1	.....	Rochester, N. Y.....	2	.....
Kansas City, Mo.....	1	.....	St. Louis, Mo.....	3	.....
Long Beach, Cal.....	1	.....	San Francisco, Cal.....	2	.....
Milwaukee, Wis.....	3	.....	Seattle, Wash.....	1	.....
New Britain, Conn.....	.....	1	Springfield, Ill.....	1	.....
New York, N. Y.....	.....	1			

MALARIA.

State Reports for July, 1917.

Place.	New cases reported.	Place.	New cases reported.
California:		Louisiana—Continued.	
Butte County.....	13	Iberia Parish.....	5
Biggs.....	1	Jefferson Davis Parish.....	1
Chico.....	4	La Salle Parish.....	1
Calaveras County.....	3	Lincoln Parish.....	2
Colusa County.....	8	Livingston Parish.....	1
Colusa.....	4	Natchitoches Parish.....	2
Fresno County—		Ouachita Parish.....	4
Firebaugh.....	1	Plaquemines Parish.....	1
Glenn County—		Rapides Parish.....	1
Orland.....	5	Red River Parish.....	4
Kern County.....	4	St. Charles Parish.....	9
Bakersfield.....	6	St. James Parish.....	1
Merced County.....	4	St. John Parish.....	8
Placer County—		St. Landry Parish.....	3
Rocklin.....	1	St. Martin Parish.....	8
San Francisco.....	1	St. Mary Parish.....	4
San Joaquin County—		St. Tammany Parish.....	23
Stockton.....	5	Tangipahoa Parish.....	11
Tehama County—		Union Parish.....	5
Red Bluff.....	1	Vermilion Parish.....	23
Tulare County.....	3	Vernon Parish.....	1
Tuolumne County.....	2	Washington Parish.....	3
Yolo County.....	9	Webster Parish.....	3
Total.....	75	W. Baton Rouge Parish.....	1
		W. Feliciana Parish.....	8
Kansas:		Total.....	243
Crawford County—		New Jersey:	
Pittsburg.....	1	Bergen County.....	7
Miami County—		Burlington County.....	1
Louisburg.....	1	Essex County.....	7
Sumner County—		Hudson County.....	1
Conway Springs.....	1	Mercer County.....	3
Wyandotte County—		Middlesex County.....	1
Kansas City.....	1	Morris County.....	1
Total.....	4	Passaic County.....	6
Louisiana:		Somerset County.....	4
Acadia Parish.....	24	Sussex County.....	4
Allen Parish.....	18	Total.....	35
Ascension Parish.....	1	South Carolina:	
Avoyelles Parish.....	2	Beaufort County.....	10
Beauregard Parish.....	3	Chester County.....	6
Bienville Parish.....	2	Laurens County.....	2
Bossier Parish.....	1	Marion County.....	22
Caddo Parish.....	4	Pickens County.....	1
Calcasieu Parish.....	3	Richland County.....	20
Claiborne Parish.....	4	Spartanburg County.....	2
Concordia Parish.....	2	Union County.....	4
De Soto Parish.....	8	Williamsburg County.....	4
E. Carroll Parish.....	30	York County.....	1
E. Feliciana Parish.....	2	Total.....	72
Evangeline Parish.....	1		
Franklin Parish.....	1		
Grant Parish.....	4		

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala.....	136		Memphis, Tenn.....		1
Boston, Mass.....	1		New Orleans, La.....	3	1
Brookline, Mass.....	1		Orange, N. J.....	1	
Cambridge, Mass.....	1		Richmond, Va.....	5	
Columbia, S. C.....	3		San Francisco, Cal.....	1	
Fort Wayne, Ind.....		1	Savannah, Ga.....	1	
Little Rock, Ark.....	1		Stockton, Cal.....	2	
Los Angeles, Cal.....	1	1			

¹ The reason that Birmingham had so many more cases of malaria reported than any other city is not that the disease is more prevalent in Birmingham than in other cities of Alabama and neighboring States, but undoubtedly because of the successful efforts the health department has made in securing the cooperation of the practicing physicians in reporting cases.

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1433.

PELLAGRA.

State Reports for July, 1917.

Place.	New cases reported.	Place.	New cases reported.
California:		Louisiana—Continued.	
Los Angeles County—		De Soto Parish.....	1
Los Angeles.....	1	East Baton Rouge Parish.....	5
Merced County.....	1	East Carroll Parish.....	1
Orange County.....	1	East Feliciana Parish.....	1
Sacramento County—		Morehouse Parish.....	5
Sacramento.....	1	Orleans Parish.....	8
Total.....	4	Ouachita Parish.....	12
Connecticut:		Pointe Coupee Parish.....	1
Hartford County—		Rapides Parish.....	1
Hartford.....	1	Richland Parish.....	2
Kansas:		St. Martin Parish.....	1
Cowley County—		St. Tammany Parish.....	2
Winfield.....	2	Union Parish.....	3
Labette County—		Vernon Parish.....	1
Chetopa.....	4	Winn Parish.....	1
Montgomery County—		Total.....	59
Chaney.....	1	South Carolina:	
Independence.....	1	Abbeville County.....	2
Sedgwick County—		Beaufort County.....	1
Wichita.....	1	Chester County.....	2
Total.....	9	Greenville County.....	1
Louisiana:		Laurens County.....	2
Allen Parish.....	1	Pickens County.....	6
Caddo Parish.....	2	Richland County.....	3
Caldwell Parish.....	2	Spartanburg County.....	5
		Sumter County.....	1
		Total.....	23

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala.....	18		Nashville, Tenn.....	2	
Charleston, S. C.....		1	New Orleans, La.....	2	2
Chattanooga, Tenn.....		1	New York, N. Y.....	1	1
Columbia, S. C.....	1		Norfolk, Va.....		1
Fort Worth, Tex.....		1	Richmond, Va.....		1
Memphis, Tenn.....	32	2	Wilmington, N. C.....		1
Mobile, Ala.....		1	Winston-Salem, N. C.....		1

¹ The reason that Birmingham had so many cases of pellagra reported is not that the disease is more prevalent in Birmingham than in other cities of Alabama and neighboring States, but undoubtedly because of the successful efforts the health department has made in securing the cooperation of the practicing physicians in reporting cases.

PNEUMONIA.

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Allentown, Pa.....	1		Newport, Ky.....	2	2*
Auburn, N. Y.....	1	1	Oakland, Cal.....	1	3
Baltimore, Md.....	1	10	Philadelphia, Pa.....	23	12
Boston, Mass.....	1	7	Pittsburgh, Pa.....	11	11
Chicago, Ill.....	41	42	Rochester, N. Y.....	1	1
Cleveland, Ohio.....	5	9	Rockford, Ill.....	1	1
Detroit, Mich.....	4	17	San Diego, Cal.....	1	
Fall River, Mass.....	1		San Francisco, Cal.....	10	4
Lincoln, Nebr.....	1	1	Topeka, Kans.....	1	
Los Angeles, Cal.....	2	2	Worcester, Mass.....	5	3
Newark, N. J.....	12	5			

POLIOMYELITIS (INFANTILE PARALYSIS).

Cases Reported, August 16 to 29, 1917.

The following table shows the number of cases of poliomyelitis reported to the United States Public Health Service from August 16 to 29, 1917. This is an addition to and continuation of the table published in the Public Health Reports, August 17, 1917, page 1320.

Place.	Period.	Cases.	Place.	Period.	Cases.
Alabama:			Vermont—Continued.		
Jefferson County—			Washington County—		
Docena.....	Aug. 19-25...	4	Continued.		
Montgomery County—			Calais.....	Aug. 12-18...	1
Montgomery.....	do.....	1	Montpelier.....	Aug. 12-25...	4
Connecticut:			Moretown.....	Aug. 19-25...	1
Hartford County—			Waitsfield.....	do.....	1
Bristol.....	do.....	1	Waterbury.....	Aug. 5-25...	5
Delaware:			Windham County—		
New Castle County—			Bellows Falls.....	Aug. 12-18...	1
McClellandsville...	Aug. 12-18...	1	Brattleboro.....	Aug. 19-25...	1
Illinois:			Windser County—		
Coles County.....	do.....	2	White River Junction.	Aug. 12-18...	1
Cook County.....	Aug. 12-25...	34	Virginia:		
Kankakee County.....	Aug. 12-18...	1	Albermarle County—		
Knox County.....	do.....	1	Ivy.....	Aug. 21-27...	1
Lake County.....	Aug. 19-25...	1	Fauquier County—		
La Salle County.....	Aug. 12-18...	1	Near Orlean.....	Aug. 15-20...	1
Madison County.....	Aug. 19-25...	1	Greene County.....	do.....	1
St. Clair County.....	do.....	1	Near Quinque.....	do.....	1
Iowa.....	Aug. 1-22...	10	Standardsville.....	Aug. 21-27...	2
Kansas:			Halifax County—		
Allen County—			Ingram.....	do.....	1
Moran.....	Aug. 19-25...	1	Rockbridge County—		
Lyon County—			Raphine.....	do.....	1
Emporia.....	Aug. 12-18...	1	Rockingham County.....	do.....	2
Morris County—			Grottoes.....	Aug. 15-20...	3
Wilsey.....	do.....	1	Harrisonburg.....	Aug. 15-27...	4
Sedgwick County—			Penn Laird.....	Aug. 21-27...	2
Peck.....	Aug. 19-25...	1	Warren County—		
Wyandotte County—			Front Royal.....	Aug. 15-20...	1
Kansas City.....	Aug. 12-18...	1	Washington:		
Maryland:			Whatcom County—		
Allegany County.....	Aug. 13-25...	7	Bellingham.....	Aug. 12-18...	1
Garrett County.....	do.....	4	Whitman County—		
Massachusetts:			Colfax.....	do.....	1
Bristol County—			West Virginia:		
Fall River.....	Aug. 12-18...	1	Barbour County—		
Essex County—			Belington.....	do.....	1
Haverhill.....	Aug. 16-28...	8	Volga.....	do.....	1
Lynn.....	Aug. 25-27...	1	Braxton County—		
Saugus (town).....	Aug. 12-18...	1	Knawls.....	do.....	1
Plymouth County—			Gilmer County—		
Hingham (town).....	do.....	1	Peter Creek.....	do.....	1
Worcester County—			Harrison County—		
Winchendon (town).....	do.....	2	Broad Oaks.....	do.....	1
Missouri:			Clarksburg.....	Aug. 12-25...	4
Jackson County—			Shinnston.....	Aug. 12-18...	1
Independence.....	Aug. 14.....	2	Marion County—		
Ohio:			Edgemoor.....	do.....	1
Wayne County—			Ida May.....	Aug. 19-25...	1
Congress Township..	Aug. 12-18...	3	Mannington.....	Aug. 12-18...	2
Chippewa Township..	do.....	2	Middleton.....	Aug. 19-25...	1
Plain Township.....	Aug. 1-28...	5	Monongah.....	Aug. 12-25...	3
Pennsylvania:			Plum Run.....	Aug. 19-25...	1
Allegheny County—			Mineral County.....	do.....	1
Pittsburgh.....	Aug. 16-23...	3	Ohio County—		
Texas:			Edgewood.....	do.....	2
Angelina County—			Greenville.....	do.....	1
Lufkin.....	Aug. 22.....	1	Preston County—		
Vermont:			Eglen.....	do.....	2
Franklin County—			Taylor County.....	do.....	2
St. Albans.....	Aug. 19-25...	1	Grafton.....	Aug. 12-18...	1
Enosburg Falls.....	Aug. 12-18...	1	Tucker County.....	Aug. 19-25...	1
Fairfield.....	Aug. 19-25...	1	Davis.....	Aug. 12-18...	1
Orange County—			Upshur County—		
Orange.....	Aug. 5-11...	1	Buckhannon.....	Aug. 19-25...	3
Washington County—			Wood County—		
Barre.....	Aug. 5-18...	5	Parkersburg.....	Aug. 12-25...	3
Barre (town).....	do.....	3			

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

State Reports for July, 1917.

Place.	New cases reported.	Place.	New cases reported.
California:		Minnesota—Continued.	
Alameda County—		Clay County—	
Berkeley.....	1	Keene Township.....	1
Marion County—		Hennepin County—	
Belvedere.....	1	Minneapolis.....	1
Orange County.....	1	Lyon County—	
Santa Clara County.....	1	Lyons Township.....	1
Total.....	4	Pope County—	
Connecticut:		Blue Mounds Township.....	5
Hartford County—		Ramsey County—	
New Britain.....	1	St. Paul.....	1
New Haven County—		Watonswan County—	
Derby.....	1	Long Lake Township.....	1
Windham County—		Total.....	11
Thompson.....	1	Montana:	
Total.....	3	Carbon County.....	1
Iowa:		Cascade County—	
Fayette County.....	1	Great Falls.....	2
Marion County.....	2	Fergus County.....	1
Page County.....	1	Granite County.....	2
Total.....	4	Total.....	6
Kansas:		New Jersey:	
Allen County—		Essex County.....	4
Elmore (R. D.).....	2	Hudson County.....	1
Wyandotte County—		Middlesex County.....	2
Kansas City.....	4	Passaic County.....	3
Total.....	6	Sussex County.....	1
Maine:		Union County.....	2
Knox County—		Total.....	11
Rockland.....	1	North Dakota:	
Michigan:		Grand Forks County.....	1
Washtenaw County—		Williams County.....	1
Ann Arbor.....	1	McLean County.....	1
Wayne County—		Emmons County.....	1
Detroit.....	2	Total.....	4
Total.....	3	South Dakota:	
Minnesota:		Clark County.....	1
Aitkin County—		Wyoming:	
Rice River Township.....	1	Natrona County.....	1

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	3		Mobile, Ala.....	1	
Boston, Mass.....	1	1	Newark, N. J.....		1
Chicago, Ill.....	9		New Castle, Pa.....	7	
Cincinnati, Ohio.....	1		New York, N. Y.....	5	2
Cleveland, Ohio.....	4	1	Oakland, Cal.....	1	
Evansville, Ind.....	1		Omaha, Nebr.....	4	1
Haverhill, Mass.....		1	Pasadena, Cal.....	1	
Kansas City, Mo.....	1		Sioux City, Iowa.....	3	
Lorain, Ohio.....	1		Troy, N. Y.....	1	
Lowell, Mass.....	1				

RABIES IN MAN.**City Report for Week Ended Aug. 11, 1917.**

During the week ended August 11, 1917, a fatal case of rabies in a child was reported in New Britain, Conn.

RABIES IN ANIMALS.**City Reports for Week Ended Aug. 11, 1917.**

During the week ended August 11, 1917, 1 case of rabies in animals was reported in Detroit, Mich., and 4 cases were reported in New Britain, Conn.

ROCKY MOUNTAIN SPOTTED FEVER.**State Reports for July, 1917.**

Place.	New cases reported.	Place.	New cases reported.
Colorado:		Nevada:	
Moffat County.....	1	Elko County.....	1
Rio Blanco County.....	4	Humboldt County.....	1
Total.....	5	Total.....	2
Montana:		Wyoming:	
Fergus County.....	1	Campbell County.....	2
Madison County.....	2	Sweetwater County.....	1
Stillwater County.....	2	Total.....	3
Total.....	5		

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1433.

SEPTIC SORE THROAT.**Massachusetts.**

An outbreak of septic sore throat was reported August 24, 1917, in Massachusetts; 39 cases having been notified in Natick; 74 cases in Wellesley, with 2 deaths; and 6 cases in Dover.

The disease was believed to have been distributed by milk.

SMALLPOX.**Minnesota.**

During the week ended August 25, 1917, two new foci of smallpox infection were reported in Minnesota, cases of the disease having been notified as follows: Hennepin County, Fort Snelling, 1; Ramsey County, North St. Paul, 1.

SMALLPOX—Continued.
State Reports for July, 1917.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
California:						
Amador County—						
Sutter Creek.....	1				1	
Fresno County.....	7				7	
Fresno.....	1				1	
Selma.....	1					1
Riverside County.....	1				1	
San Bernardino County—						
San Bernardino.....	1				1	
San Mateo County—						
South San Francisco.....	1					1
Yuba County.....	1					1
Total.....	14				11	3
Colorado:						
Denver County—						
Denver.....	3		2		1	
Garfield County—						
Glenwood Springs.....	4					4
Weld County—						
Greeley.....	2					2
Total.....	9		2		1	6
Kansas:						
Allen County—						
La Harpe.....	2				2	
Iola.....	1				1	
Atchison County—						
Atchison.....	1				1	
Brown County—						
Horton.....	3				3	
Butler County—						
El Dorado.....	1				1	
Cherokee County—						
Columbus.....	3				3	
Hallowell.....	1				1	
West Mineral.....	6				6	
Cowley County—						
Cambridge.....	1				1	
Geuda Springs.....	1				1	
Crawford County—						
Girard (R. D.).....	2			1	1	
Hepler (R. D.).....	1			1		
McCune (R. D.).....	2				2	
Mulberry.....	5				5	
Doniphan County—						
Doniphan.....	1				1	
Sparks (R. D.).....	1				1	
Troy (R. D.).....	2				2	
Douglas County—						
Eudora (R. D.).....	10				10	
Vinland.....	3				3	
Ford County—						
Spearville (R. D.).....	1				1	
Geary County—						
Fort Riley.....	1				1	
Harvey County—						
Newton.....	2				2	
Jefferson County—						
Valley Falls.....	1				1	
Jewell County—						
Lebanon (R. D.).....	6				6	
Lyon County—						
Emporia.....	1				1	
Marion County—						
Marion (R. D.).....	1				1	
McPherson County—						
Marquette.....	4				4	
Miami County—						
Paola.....	2				2	

SMALLPOX—Continued.

State Reports for July, 1917—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Kansas—Continued.						
Montgomery County—						
Independence (R. D.).....	2				2	
Neosho County—						
Chanute.....	1				1	
Norton County—						
Almena (R. D.).....	8				8	
Ottawa County—						
Minneapolis.....	5				5	
Russell County—						
Russell (R. D.).....	3				3	
Sedgwick County—						
Wichita.....	6				6	
Sumner County—						
Milan.....	1				1	
Mulvane.....	1				1	
Wilson county—						
Coyville (R. D.).....	8				8	
Woodson County—						
Toronto (R. D.).....	1				1	
Wyandotte County—						
Rosedale (R. D.).....	1				1	
Kansas City.....	19				19	
Total.....	122			2	120	
Michigan:						
Allegan County—						
Hopkins Township.....	3					3
Alpena County—						
Long Rapids Township...	1				1	
Antrim County—						
Mancelona.....	3				1	2
Chippewa County—						
Detour Township.....	2					2
Sault Ste. Marie.....	3				3	
Crawford County—						
Grayling Township.....	1					1
Emmet County—						
Bliss Township.....	2				2	
Pelleten.....	1				1	
Genesee County—						
Gaines Township.....	2					2
Flint City.....	23				23	
Ingham County—						
Williamston.....	3				3	
Lansing City.....	7				7	
Jackson County—						
Lecni Township.....	1				1	
Kent County—						
Alpine Township.....	1				1	
Grand Rapids.....	2				2	
Livingston County—						
Conway Township.....	2				2	
Mackinac County—						
Portage Township.....	6				6	
Macomb County—						
Mt. Clemens.....	2				1	1
Marquette County—						
Marquette.....	1		1			
Meecosta County—						
Barryton.....	1		1			
Montmorency County—						
Briley Township.....	3				3	
Oakland County—						
Pontine Township.....	1				1	
Waterford Township.....	3				3	
Pontiac.....	11				11	

SMALLPOX—Continued.

State Reports for July, 1917—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Michigan—Continued.						
Presque Isle County—						
Belknap Township.....	1				1	
Rogers.....	2				2	
Onaway.....	1				1	
Saginaw County—						
Saginaw.....	1			1		
St. Clair County—						
Kimball Township.....	1				1	
Sanilac County—						
Sanilac Township.....	4				3	1
Shiawassee County—						
Durand.....	1				1	
Tuscola County—						
Caro.....	6				6	
Wayne County—						
Ford.....	2			1	1	
Highland Park.....	3					3
Detroit.....	20				20	
Total.....	127			4	168	15
Minnesota:						
Becker County—						
Detroit.....	1				1	
Blue Earth County—						
Rapidian Township.....	1				1	
Brown County—						
Sleepy Eye.....	1				1	
Albion Township.....	1				1	
Carver County—						
Chaska.....	1				1	
Chanhassen Township.....	2				2	
Laketown Township.....	1				1	
Clay County—						
Moorhead.....	3				3	
Crow Wing County—						
Brainerd.....	10				10	
Crosby.....	2				1	1
Manganese.....	1					1
Emily Township.....	5				5	
Dakota County—						
Farmington.....	1				1	
Empire Township.....	2				2	
Douglas County—						
Carlos Township.....	2				2	
Fillmore County—						
Mabel.....	4				4	
Freeborn County—						
Freeborn Township.....	1				1	
Goodhue County—						
Pine Island.....	1				1	
Hennepin County—						
Minneapolis.....	52	1		2	50	
Richfield.....	5				5	
Houston County—						
Spring Grove.....	1				1	
Itasca County—						
Deer River.....	1				1	
Jackson County—						
Jackson.....	1				1	
Kittson County—						
Karlstad.....	1				1	
Lyon County—						
Tracy.....	3				3	
Martin County—						
Fairmont.....	2				2	
Pleasant Prairie Township.....	1					1
Silver Lake Township.....	1				1	

SMALLPOX—Continued.

State Reports for July, 1917—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number none or successfully vaccinated.	Vaccination history not obtained or uncertain.
Minnesota—Continued.						
Mower County—						
Austin.....	2				2	
Murray County—						
Holly Township.....	1				1	
Olmsted County—						
Rochester.....	1				1	
New Haven Township.....	3				3	
Ramsey County—						
St. Paul.....	11			1	10	
Rice County—						
Faribault.....	2					2
St. Louis County—						
Duluth.....	9	6	4	2	3	
Hibbing.....	1			1		
Rice Lake Township.....	11				11	
Scott County—						
Glendale Township.....	1				1	
Todd County—						
Hartford Township.....	2				2	
Moran Township.....	1				1	
Wadena County—						
Wadena.....	1				1	
Washington County—						
Forest Lake.....	1				1	
Marine.....	1				1	
Forest Lake Township.....	6				6	
Watsonwan County—						
St. James.....	6		1		2	3
Total.....	168	7	5	6	149	8
Montana:						
Beaverhead County.....	5					5
Cascade County.....	10				10	
Chouteau County.....	2				2	
Custer County.....	3				2	1
Dawson County.....	3				3	3
Flathead County.....	3					3
Gallatin County—						
Bozeman.....	1					1
Jefferson County.....	2					2
Lewis and Clark County.....	2			1	1	
Lincoln County.....	1				1	
Musselshell County.....	3				3	
Richland County.....	1					1
Sanders County.....	2				2	
Sheridan County.....	1				1	
Silverbow County.....	4					4
Butte.....	11		1		10	
Yellowstone County—						
Billings.....	5				2	3
Total.....	59		1	1	34	23

SMALLPOX—Continued.

Miscellaneous State Reports.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Connecticut (July 1-31):			Maine (June 1-30)—Contd.		
Litchfield County—			Washington County—		
Winchester.....	5	.....	Forest Station (Town).....	1	.....
New Haven County—			Millbridge (Town).....	6	.....
Waterbury.....	1	.....	Vanceboro (Town).....	2	.....
Total.....	6	.....	Letter A (Town).....	1	.....
Iowa (July 1-31):			Total.....	49	.....
Adair County.....	7	.....	Maine (July 1-31):		
Appanoose County.....	1	.....	Aroostook County—		
Audubon County.....	1	.....	Fort Kent (Town).....	1	.....
Boone County.....	3	.....	Frenchville (Town).....	1	.....
Cerro Gordo County.....	2	.....	Linneus (Town).....	17	.....
Crawford County.....	3	.....	Penobscot County—		
Dallas County.....	1	.....	Hampden (Town).....	4	.....
Decatur County.....	1	.....	Oldtown.....	1	.....
Dubuque County.....	2	.....	Somerset County—		
Franklin County.....	4	.....	Anson (Town).....	1	.....
Ida County.....	3	.....	Hartland (Town).....	4	.....
Jefferson County.....	2	.....	Palmyra (Town).....	1	.....
Lee County.....	9	.....	Pittsfield (Town).....	1	.....
Linn County.....	3	.....	Stearns County—		
Lucas County.....	1	.....	Brookton (Town).....	1	.....
Lyon County.....	4	.....	Washington County—		
Mahaska County.....	6	.....	Steuben (Town).....	1	.....
Mitchell County.....	1	.....	Vanceboro (Town).....	17	.....
Monona County.....	9	.....	Total.....	50	.....
O'Brien County.....	1	.....	Nevada (July 1-31):		
Page County.....	5	.....	Humboldt County.....	1	.....
Palo Alto County.....	1	.....	North Dakota (July 1-31):		
Plymouth County.....	3	.....	Burleigh County.....	1	.....
Polk County.....	4	.....	Cass County.....	2	.....
Pottawattamie County.....	7	.....	Golden Valley County.....	1	.....
Poweshiek County.....	1	.....	Grand Forks County.....	1	.....
Scott County.....	5	.....	Grant County.....	3	.....
Story County.....	1	.....	Oliver County.....	2	.....
Wapello County.....	1	.....	Ramsey County.....	1	.....
Wasson County.....	5	.....	Ward County.....	8	.....
Webster County.....	5	.....	Williams County.....	2	.....
Winnebago County.....	1	.....	Total.....	21	.....
Winneshek County.....	2	.....	South Carolina (July 1-31):		
Woodbury County.....	5	.....	Aiken County.....	1	.....
Total.....	110	.....	Berkeley County.....	6	.....
Louisiana (July 1-31):			Total.....	7	.....
Acadia Parish.....	1	.....	South Dakota (July 1-31):		
Allen Parish.....	2	.....	Clark County.....	7	.....
Calcasieu Parish.....	3	.....	Davison County.....	13	.....
Jackson Parish.....	7	.....	Day County.....	2	.....
Orleans Parish.....	17	.....	Deuel County.....	5	.....
Rapides Parish.....	3	.....	Grant County.....	1	.....
St. Tammany Parish.....	1	.....	Jerauld County.....	4	.....
Tangipahoa Parish.....	8	.....	Lake County.....	5	.....
Winn Parish.....	2	.....	Lawrence County.....	3	.....
Total.....	44	.....	Roberts County.....	1	.....
Maine (June 1-30):			Spink County.....	1	.....
Aroostook County—			Tripp County.....	6	.....
Fort Kent (Town).....	1	.....	Walworth County.....	3	3
Hodgdon (Town).....	1	.....	Yankton County.....	2	.....
Hancock County—			Ziebach County.....	3	.....
Hancock (Town).....	1	.....	Total.....	57	3
Penobscot County—			Wyoming (July 1-31):		
Bangor.....	3	.....	Crook County.....	1	.....
Eddington (Town).....	1	.....	Natrona County.....	1	.....
Enfield (Town).....	1	.....	Campbell County.....	3	.....
Hampden (Town).....	13	.....	Total.....	5	.....
Howland (Town).....	1	.....		
Lee (Town).....	1	.....		
Orono (Town).....	1	.....		
Piscataquis County—					
Greenville (Town).....	6	.....		
Somerset County—					
Anson (Town).....	9	.....		

SMALLPOX—Continued.

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	1	.....	Minneapolis, Minn.....	5	.....
Butte, Mont.....	3	.....	Oklahoma City, Okla.....	2	.....
Chicago, Ill.....	5	.....	Omaha, Nebr.....	8	.....
Cincinnati, Ohio.....	1	.....	Pittsburgh, Pa.....	1	.....
Cleveland, Ohio.....	6	.....	Pontiac, Mich.....	2	.....
Columbus, Ohio.....	1	.....	Rocky Mount, N. C.....	2	.....
Dayton, Ohio.....	4	.....	St. Joseph, Mo.....	1	.....
Denver, Colo.....	2	.....	St. Louis, Mo.....	3	.....
Detroit, Mich.....	2	.....	Salt Lake City, Utah.....	1	.....
Flint, Mich.....	2	.....	Seattle, Wash.....	1	.....
Grand Rapids, Mich.....	3	.....	Sioux City, Iowa.....	6	.....
Kansas City, Kans.....	3	.....	Toledo, Ohio.....	2	.....
Little Rock, Ark.....	1	.....	Zanesville, Ohio.....	2	.....
Memphis, Tenn.....	2	.....		

TETANUS.

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chicago, Ill.....	.....	1	New York, N. Y.....	1	.....
Cleveland, Ohio.....	1	1	Norfolk, Va.....	.....	1
Columbus, Ohio.....	.....	1	Sacramento, Cal.....	2	2
Lexington, Ky.....	.....	1	St. Louis, Mo.....	1	.....

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1433.

TYPHOID FEVER.

Arkansas—Paragould.

A report dated August 22, 1917, states that there had been 80 cases of typhoid fever in Paragould, Greene County, Ark., within the preceding six weeks, and that from 3 to 5 cases daily were being notified.

Kansas—Leavenworth.

During the week ended August 25, 1917, 16 cases of typhoid fever were reported in the city of Leavenworth, Kans., and 5 cases in Leavenworth County.

Massachusetts—Gardner.

On August 24, 1917, an outbreak of typhoid fever was reported from Gardner, Mass., 5 cases having been reported on that day, and 31 cases previously. All cases were traced to one milk route. It was found that an intermittent carrier of the typhoid bacillus was supplying milk to the distributor. Both the carrier and the distributor have discontinued selling milk.

TYPHOID FEVER—Continued.

State Reports for July, 1917.

Place.	New cases reported.	Place.	New cases reported.
California:		Connecticut:	
Alameda County—		Fairfield County—	
Berkeley.....	2	Bridgeport.....	5
Hayward.....	1	Fairfield.....	2
Oakland.....	5	Greenwich.....	4
Butte County—		Norwalk.....	1
Chico.....	1	Ridgefield.....	1
Colusa County.....	2	Trumbull.....	1
Contra Costa County—		Hartford County—	
Concord.....	1	East Hartford.....	1
Richmond.....	4	Hartford.....	1
El Dorado County.....	2	New Britain.....	3
Fresno County.....	4	Litchfield County—	
Fresno.....	1	Salisbury.....	3
Imperial County.....	6	Winchester.....	1
El Centro.....	2	Middlesex County—	
Imperial.....	1	Old Saybrook.....	1
Kern County—		New Haven County—	
Bakersfield.....	1	Branford.....	1
Los Angeles County.....	1	Milford.....	1
Los Angeles.....	25	New Haven.....	6
Pomona.....	1	Waterbury.....	5
Napa County.....	1	Tolland County—	
Nevada County.....	4	Ellington.....	1
Placer County—		Tolland.....	1
Roseville.....	1	Windham County—	
Riverside County.....	3	Plainfield.....	1
Corona.....	1	Windham.....	1
Sacramento County.....	1	Willimantic.....	5
Sacramento.....	8		
San Bernardino County.....	2	Total.....	46
San Bernardino.....	3		
San Francisco.....	19	Kansas:	
San Joaquin County—		Allen County—	
Stockton.....	1	La Harpe (R. D.).....	1
San Mateo County—		Anderson County—	
Daly City.....	1	Harris (R. D.).....	1
Santa Barbara County—		Westphalia.....	1
Santa Barbara.....	1	Bourbon County—	
Santa Clara County.....	4	Fort Scott (R. D.).....	7
Palo Alto.....	1	Brown County—	
San Jose.....	2	Hiawatha.....	1
Santa Clara.....	1	Butler County—	
Siskiyou County—		Augusta (R. D.).....	3
Dunsmuir.....	1	Douglas.....	1
Montague.....	1	Eldorado.....	3
Solano County.....	5	Potwin.....	1
Sonoma County.....	4	Chautauqua County—	
Healdsburg.....	1	Elgin.....	4
Santa Rosa.....	2	I Leeds (R. D.).....	2
Stanislaus County.....	5	Sedan.....	1
Modesto.....	18	Cherokee County—	
Tehama County.....	1	Columbus.....	1
Tulare County—		Cloud County—	
Dinamba.....	1	Concordia.....	1
Tulare.....	1	Glasco.....	3
Yuba County.....	1	Coffey County—	
Total.....	155	Burlington.....	2
		Comanche County—	
Colorado:		Coldwater (R. D.).....	4
Archuleta County.....	1	Protection (R. D.).....	1
Boulder County.....	1	Cowley County—	
Chaffee County.....	2	Arkansas City.....	2
Denver County—		Atlanta (R. D.).....	1
Denver.....	6	Burden.....	4
El Paso County.....		Winfield.....	3
Colorado Springs.....	2	Crawford County—	
Gunnison County.....	1	Girard (R. D.).....	1
Larimer County.....	1	Mulberry.....	2
Mesa County.....	1	Fittsburg (R. D.).....	2
Otero County.....	3	Decatur County—	
Rocky Ford.....	4	Herndon.....	3
Pueblo County—		Norcaton.....	2
Pueblo.....	6	Dickinson County—	
Routt County.....	3	Herington.....	9
San Miguel County.....	1	Doniphan County—	
Total.....	32	Wathena.....	1
		Douglas County—	
		Baldwin.....	1
		Lawrence.....	1

TYPHOID FEVER—Continued.
State Reports for July, 1917—Continued.

Place.	New cases reported.	Place.	New cases reported.
Kansas—Continued.		Kansas—Continued.	
Ellsworth County—		Republic County—	
Ellsworth (R. D.).....	1	Belleville.....	1
Franklin County—		Rice County—	
Ottawa (R. D.).....	1	Chase (R. D.).....	2
Geary County—		Sterling.....	1
Junction City.....	1	Riley County—	
Graham County—		Riley (R. D.).....	3
Morland (R. D.).....	1	Saline County—	
Gray County—		Salina.....	4
Cimarron.....	1	Sedgwick County—	
Ingalls.....	1	Cheney.....	1
Greenwood County—		Sedgwick (R. D.).....	2
Eureka.....	1	Wichita (R. D.).....	19
Hamilton.....	2	Shawnee County—	
Madison (R. D.).....	2	Topeka.....	6
Quincy (R. D.).....	3	Smith County—	
Severy.....	1	Smith Center (R. D.).....	2
Virgil (R. D.).....	1	Stafford County—	
Harvey County—		Radium.....	1
Newton.....	4	Sumner County—	
Haskell County—		South Haven (R. D.).....	1
Satanta.....	2	Wellington.....	1
Jewell County—		Washington County—	
Burr Oak.....	2	Washington (R. D.).....	2
Formosa (R. D.).....	1	Wyandotte County—	
Ionia (R. D.).....	1	Bonner Springs.....	1
Johnson County—		Kansas City.....	2
Olathe.....	1	Total.....	299
Kearny County—			
Lakin (R. D.).....	1	Louisiana:	
Kingman County—		Acadia Parish.....	4
Kingman.....	2	Allen Parish.....	2
Labette County—		Assumption Parish.....	1
Chetopa.....	1	Avoyelles Parish.....	11
Edna (R. D.).....	1	Caddo Parish.....	11
Leavenworth County—		Caldwell Parish.....	3
Leavenworth (R. D.).....	74	Catahoula Parish.....	2
Tonganoxie (R. D.).....	1	Concordia Parish.....	6
Linn County—		De Soto Parish.....	2
La Cygne (R. D.).....	2	East Baton Rouge Parish.....	4
Lyon County—		Franklin Parish.....	3
Olpe.....	2	Iberia Parish.....	4
Plymouth.....	1	Iberville Parish.....	6
Marshall County—		Jefferson Parish.....	6
Blue Rapids.....	1	Jefferson Davis Parish.....	15
Vermillion.....	1	Lafayette Parish.....	6
McPherson County—		Lafourche Parish.....	4
Lindsborg.....	1	La Salle Parish.....	1
McPherson.....	1	Livingston Parish.....	1
Miami County—		Madison Parish.....	1
Osawatimie (R. D.).....	3	Morehouse Parish.....	1
Paola.....	1	Orleans Parish.....	132
Montgomery County—		Ouachita Parish.....	9
Caney.....	2	Plaquemines Parish.....	10
Cherryvale.....	2	Rapides Parish.....	17
Coffeyville (R. D.).....	32	Richland Parish.....	2
Independence.....	1	St. Charles Parish.....	3
Liberty (R. D.).....	4	St. James Parish.....	4
Nemaha County—		St. Landry Parish.....	6
Seneca.....	1	St. Martin Parish.....	5
Neosho County—		St. Mary Parish.....	3
St. Paul.....	1	St. Tammany Parish.....	2
Ness County—		Tangipahoa Parish.....	6
Ness City.....	1	Terrebonne Parish.....	8
Norton County—		Tensas Parish.....	1
Norcatour (R. D.).....	1	Union Parish.....	2
Norton.....	2	Vermilion Parish.....	12
Osage County—		Vernon Parish.....	1
Lyndon.....	1	Washington Parish.....	11
Olivet (R. D.).....	1	Webster Parish.....	2
Osborne County—		West Baton Rouge Parish.....	5
Osborne.....	1	West Carroll Parish.....	4
Pawnee County—		Winn Parish.....	1
Larned (R. D.).....	1	Total.....	340
Pratt County—			
Cullison (R. D.).....	2		
Reno County—			
Hutchinson (R. D.).....	7		

TYPHOID FEVER—Continued.

State Reports for July, 1917—Continued.

Place.	New cases reported.	Place.	New cases reported.
Maine:		Michigan—Continued.	
Androscoggin County—		Wayne County—	
Durham (Town).....	2	Huron Township.....	1
Aroostook County—		Ford.....	2
Fort Kent (Town).....	4	Highland Park.....	1
Portage (Town).....	1	St. Clair Heights.....	1
Cumberland County—		Wexford County—	
Portland.....	9	Cadillac.....	1
Penobscot County—		Total.....	68
Hampden (Town).....	1		
Somerset County—			
Madison (Town).....	1	Minnesota:	
Total.....	18	Becker County—	
Michigan:		Frazee.....	1
Allegan County—		Beltrami County—	
Clyde Township.....	1	Spooner.....	2
Bay County—		Blue Earth County—	
Bay City.....	6	Vernon Center.....	1
Benzie County—		Brown County—	
Blaine Township.....	1	Comfrey.....	1
Frankfort.....	1	New Ulm.....	1
Calhoun County—		Carlton County—	
Albion.....	1	Cloquet.....	2
Battle Creek.....	2	Clay County—	
Clare County—		Ulen.....	1
Garfield Township.....	1	Dakota County—	
Clinton County—		South St. Paul.....	1
Bath Township.....	2	Hennepin County—	
Emmet County—		Minneapolis.....	11
Petoskey.....	1	Lincoln County—	
Genesee County—		Hendricks.....	1
Argentine Township.....	1	Lyon County—	
Flushing.....	4	Balaton.....	2
Flint.....	2	Coon Creek Township.....	1
Ingham County—		Mille Laes County—	
Lansing.....	8	Princeton.....	1
Jackson County—		Nicollet County—	
Jackson.....	1	St. Peter.....	1
Kalamazoo County—		Nobles County—	
Kalamazoo.....	3	Adrian.....	2
Kent County—		Olmsted County—	
Tyrone Township.....	1	Quincy Township.....	1
Lapeer County—		Ottertail County—	
Oregon Township.....	2	Clitherall.....	1
Lenawee County—		Leaf Lake Township.....	1
Fairfield Township.....	1	Pennington County—	
Madison Township.....	1	Thief River Falls.....	1
Macomb County—		Polk County—	
Richmond.....	5	Hill River Township.....	1
Manistee County—		Ramsey County—	
Manistee.....	2	St. Paul.....	4
Monroe County—		Rice County—	
Bedford Township.....	1	Farihaull.....	1
Dundee Township.....	1	Northfield Township.....	1
Montcalm County—		St. Louis County—	
Day Township.....	1	Duluth.....	5
Newaygo County—		Ely.....	2
Goodwell Township.....	1	Sherburne County—	
Oakland County—		Elk River.....	1
Holly.....	1	Stearns County—	
Saginaw County—		St. Cloud.....	1
Brady Township.....	1	Brockway Township.....	8
St. Charles.....	1	Steele County—	
Saginaw.....	2	Owatonna.....	6
St. Clair County—		Stevens County—	
Wales Township.....	1	Morris.....	1
Sanilac County—		Wabasha County—	
Marion Township.....	1	Elgin.....	1
Sandusky.....	1	Wadena County—	
Tuscola County—		Meadow Township.....	1
Wisner Township.....	1	Wilkin County—	
Washtenaw County—		Donnelly Township.....	1
Ypsilanti.....	2	Wright County—	
		Otsego Township.....	1
		Total.....	67

TYPHOID FEVER—Continued.

State Reports for July, 1917—Continued.

Place.	New cases reported.	Place.	New cases reported.
Montana:		North Dakota:	
Carbon County.....	1	Burleigh County.....	1
Dawson County.....	9	Cass County.....	2
Flathead County.....	2	Richland County.....	1
Lewis and Clark County—		Rolette County.....	1
Helena.....	2	Williams County.....	2
Lincoln County.....	2	Total.....	7
Musselshell County.....	2		
Park County—		South Carolina:	
Livingston.....	1	Aiken County.....	1
Silverbow County—		Chester County.....	7
Butte.....	2	Chesterfield County.....	2
Stillwater County.....	1	Dorchester County.....	7
Yellowstone County—		Florence County.....	1
Billings.....	5	Greenville County.....	22
Total.....	27	Laurens County.....	7
		Marion County.....	5
Nevada:		Orangeburg County.....	2
Churchill County.....	2	Pickens County.....	6
		Richland County.....	14
New Jersey:		Spartanburg County.....	13
Atlantic County.....	5	Sumter County.....	3
Bergen County.....	4	Williamsburg County.....	2
Burlington County.....	6	Total.....	92
Camden County.....	7		
Cape May County.....	3	South Dakota:	
Cumberland County.....	3	Jackson County.....	1
Essex County.....	10	Minnehaha County.....	1
Gloucester County.....	1	Spink County.....	1
Hudson County.....	8	Total.....	3
Mercer County.....	5		
Middlesex County.....	3	Wyoming:	
Monmouth County.....	2	Washakie County.....	2
Morris County.....	4	Natrona County.....	1
Passaic County.....	4	Uinta County.....	3
Salem County.....	1	Total.....	6
Somerset County.....	4		
Union County.....	4		
Total.....	74		

Maine Report for June, 1917.

Place.	New cases reported.	Place.	New cases reported.
Maine:		Maine—Continued.	
Androscoggin County—		York County—	
Durham (town).....	2	Waterborough (town).....	1
Cumberland County—		Total.....	10
Portland.....	7		

City Reports for Week Ended Aug. 11, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio.....	1		Charleston, S. C.....	3	
Alton, Ill.....	2		Chattanooga, Tenn.....	27	4
Atlantic City, N. J.....	1		Chelsea, Mass.....	1	
Baltimore, Md.....	15	4	Chicago, Ill.....	5	
Beaver Falls, Pa.....	2	1	Cincinnati, Ohio.....	3	1
Birmingham, Ala.....	36	2	Cleveland, Ohio.....	8	1
Boston, Mass.....	3	2	Coffeyville, Kans.....	1	
Bridgeport, Conn.....		1	Columbia, S. C.....	3	
Buffalo, N. Y.....	6	2	Columbus, Ohio.....	3	
Cambridge, Mass.....	2	1	Covington, Ky.....	2	
Camden, N. J.....	1		Dayton, Ohio.....	2	1

TYPHOID FEVER—Continued.

City Reports for Week Ended Aug. 11, 1917—Continued

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Denver, Colo.	4	1	Orange, N. J.	1	
Detroit, Mich.	11	2	Philadelphia, Pa.	9	1
East Chicago, Ind.	1		Pittsburgh, Pa.	4	3
Elizabeth, N. J.	2		Portland, Me.	1	
Evansville, Ind.	28	2	Portland, Oreg.	1	1
Fall River, Mass.	6		Portsmouth, Va.	6	1
Flint, Mich.	4	1	Providence, R. I.	1	1
Fort Wayne, Ind.	1		Quincy, Ill.	1	
Fort Worth, Tex.	3		Reading, Pa.	1	
Grand Rapids, Mich.	1		Richmond, Va.	3	2
Hartford, Conn.	1		Rockford, Ill.	4	
Indianapolis, Ind.	3		Sacramento, Cal.	3	
Kalamazoo, Mich.	1	1	St. Joseph, Mo.	4	
Kansas City, Kans.	3		St. Louis, Mo.	19	3
Kansas City, Mo.	5		Salt Lake City, Utah	4	
Knoxville, Tenn.	9		San Diego, Cal.	2	
Kokomo, Ind.	3		San Francisco, Cal.	3	
Lancaster, Pa.	1		Savannah, Ga.	3	
Lawrence, Mass.		1	Seattle, Wash.	3	
Lexington, Ky.		2	Springfield, Ill.		1
Long Beach, Cal.	2	1	Springfield, Mass.	2	
Los Angeles, Cal.	1		Springfield, Ohio	3	
Lowell, Mass.	1		Steuensville, Ohio	3	
Lynchburg, Va.	12		Stockton, Cal.	1	1
McKeesport, Pa.	1	1	Tacoma, Wash.	2	
Medford, Mass.	1		Taunton, Mass.	1	
Memphis, Tenn.	16	2	Toledo, Ohio	3	
Milwaukee, Wis.	1		Topeka, Kans.	3	
Minneapolis, Minn.	3		Troy, N. Y.	2	
Mobile, Ala.	1	1	Waltham, Mass.	1	
Nashville, Tenn.	14	1	Washington, D. C.	8	4
Newark, N. J.	1		Watertown, N. Y.	2	
New Haven, Conn.	1		Wheeling, W. Va.	8	2
New Orleans, La.	13		Wilmington, Del.	13	1
New York, N. Y.	35	3	Wilmington, N. C.	3	
Niagara Falls, N. Y.	1	1	Winston-Salem, N. C.	5	1
Norfolk, Va.	10		Worcester, Mass.	4	1
Oakland, Cal.	2		Zanesville, Ohio	2	
Oklahoma City, Okla.	5				

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for July, 1917.

State.	Cases reported.			State.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
California	97	665	199	Minnesota	444	303	161
Colorado	24	66	21	Montana	29	64	55
Connecticut	142	327	41	Nevada		12	11
Iowa	55		74	New Jersey	323	359	170
Kansas	65	328	99	North Dakota	26	27	15
Louisiana	55	41	5	South Carolina	48	2	15
Maine	5	119	3	South Dakota	8	24	14
Michigan	471	526	371	Wyoming		27	18

Maine Report for June, 1917.

During the month of June, 1917, 18 cases of diphtheria, 374 cases of measles, and 7 cases of scarlet fever were reported in the State of Maine.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS— Continued.

City Reports for Week Ended Aug. 11, 1917.

City.	Popula- tion as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.	589,621	261	7	2	19	2			69	31
Boston, Mass.	756,476		49	4	40	4	7		70	19
Chicago, Ill.	2,497,722	628	98	16	28	4	43	5	254	56
Cleveland, Ohio.	674,073		26	3	8		2		24	22
Detroit, Mich.	571,784	207	45	3	6		18		23	16
Los Angeles, Cal.	503,812	125	3	2	9		6		32	20
New York, N. Y.	5,602,841	1,448	129	15	111	4	18		302	168
Philadelphia, Pa.	1,709,518	688	39	3	32	1	7		74	59
Pittsburgh, Pa.	579,090	199	20		20	1	5		18	9
St. Louis, Mo.	757,309	171	28	2	3		23		58	22
From 300,000 to 500,000 inhab- itants:										
Buffalo, N. Y.	468,558		8	1	4		5		38	18
Cincinnati, Ohio.	410,476	120	7	1	3		2		22	16
Jersey City, N. J.	306,345	91	4		3		1	1	17	10
Milwaukee, Wis.	436,535		14	2			12		23	4
Minneapolis, Minn.	363,454		8		1		2			
Newark, N. J.	408,894	110	12		13		7		18	17
New Orleans, La.	371,747	116	11		2		1		26	16
San Francisco, Cal.	463,516	100	15	2	20		9		28	12
Seattle, Wash.	348,639	39	2		4		1		9	2
Washington, D. C.	363,980	100	2		5		3		15	7
From 200,000 to 300,000 inhab- itants:										
Columbus, Ohio.	214,878	61	5				6		7	5
Denver, Colo.	260,800	50	5		14		5	1		6
Indianapolis, Ind.	271,708		30		2		4		57	
Kansas City, Mo.	297,847		3		1		2			8
Portland, Oreg.	295,463	42	1	1	3		4		3	5
Providence, R. I.	254,960	75	12	1			3			7
Rochester, N. Y.	256,417	52	7		13				13	4
From 100,000 to 200,000 inhab- itants:										
Albany, N. Y.	104,199				2		1		11	
Birmingham, Ala.	181,762	69			11				18	5
Bridgeport, Conn.	121,579	39	3				1		5	6
Cambridge, Mass.	112,981	36	2		1				11	10
Camden, N. J.	106,233		2		2				3	
Dayton, Ohio.	127,224	48	1		4		2		4	4
Fall River, Mass.	128,366	47	9		3		5		4	2
Fort Worth, Tex.	104,562	15	1							
Grand Rapids, Mich.	128,291	21	3		2		2		7	1
Hartford, Conn.	110,900	46	8		2		1		5	3
Lawrence, Mass.	100,560	24	2				1		8	4
Lowell, Mass.	113,245	50	1						5	4
Lynn, Mass.	102,425	17	3	1	3		1		5	4
Memphis, Tenn.	148,995	37	2		1		1		18	4
Nashville, Tenn.	117,057	37	1				1		6	2
New Bedford, Mass.	118,158	27	1		4				10	2
New Haven, Conn.	149,085				11				4	4
Oakland, Cal.	198,604	34					1		3	2
Omaha, Nebr.	165,470	38					3		1	3
Reading, Pa.	109,381	18	3		2					2
Richmond, Va.	156,687	47	4		1		4		1	5
Salt Lake City, Utah.	117,399	33	3	1			4			
Springfield, Mass.	105,942	30	5		1		2		10	2
Syracuse, N. Y.	155,624	37	6	1	9		4			2
Tacoma, Wash.	112,770						1			
Toledo, Ohio.	191,554	53	4		2		3		7	4
Trenton, N. J.	111,593	48	1		2		2		4	3
Worcester, Mass.	163,314	45	2				1			
From 50,000 to 100,000 inhab- itants:										
Akron, Ohio.	85,625		8		2					
Allentown, Pa.	63,505	19	1						1	
Altoona, Pa.	58,659		11	1			1		2	
Atlantic City, N. J.	57,660				1				4	1
Bayonne, N. J.	69,893		1				1			
Berkeley, Cal.	57,653	9					1		2	
Binghamton, N. Y.	53,973	12	3		2				5	1
Brockton, Mass.	67,449	11	1				1		5	
Canton, Ohio.	60,852	19								
Charleston, S. C.	60,734	27	2		1		2			5

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS— Continued.

City Reports for Week Ended Aug. 11, 1917—Continued.

City.	Popula- tion as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabit- ants—Continued.										
Chattanooga, Tenn.	60,075						2			1
Covington, Ky.	57,144	15	1						3	
Duluth, Minn.	94,495	4	7		2		1	1	3	1
Elizabeth, N. J.	86,690	20	7	1	3		2		1	
El Paso, Tex.	63,705	39	1		1				7	6
Erie, Pa.	75,195						3		3	14
Evansville, Ind.	76,078	34	2						3	2
Flint, Mich.	54,772				3				6	
Fort Wayne, Ind.	76,183	19	4							5
Harrisburg, Pa.	72,015	22	1		1		5		4	1
Hoboken, N. J.	77,214	11	1				1		2	2
Johnstown, Pa.	68,529	19								
Little Rock, Ark.	57,343	5							1	
Malden, Mass.	51,155	8	4		3		1		4	3
Manchester, N. H.	78,283	19	1		1				8	3
Mobile, Ala.	58,221	24							1	2
New Britain, Conn.	53,794	34	1	1	2				1	
Norfolk, Va.	89,612									1
Oklahoma City, Okla.	92,943	17								
Passaic, N. J.	71,744	28	5		1				2	3
Portland, Me.	63,867	12	1		6		1			
Rockford, Ill.	55,185	19	1							
Sacramento, Cal.	66,895	21	1		4		1		3	4
Saginaw, Mich.	55,642	20	2				5		6	3
St. Joseph, Mo.	85,236	23								5
San Diego, Cal.	53,330	14			4		1		8	5
Savannah, Ga.	68,805	20	1		1					
Schenectady, N. Y.	99,519	13			4				3	
Sioux City, Iowa	57,678	1					2			
South Bend, Ind.	68,946	13					1			
Springfield, Ill.	61,120	14			1					1
Springfield, Ohio.	51,550	16	3	1	4				2	1
Terre Haute, Ind.	66,083	25	1							1
Troy, N. Y.	77,916								3	4
Wilkes-Barre, Pa.	76,776	25	1		1				2	
Wilmington, Del.	94,265	32	2		1		1			
York, Pa.	51,656				1				1	
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.	27,732	4			2		1		2	1
Auburn, N. Y.	37,385	14								
Austin, Tex.	34,814	10	1							2
Brookline, Mass.	32,730	6			2					
Butler, Pa.	27,632	8	2							
Butte, Mont.	43,425		2				2			
Chelsea, Mass.	46,192	13		1	1		1		1	
Chicopee, Mass.	29,319						1			1
Columbia, S. C.	34,611	17	1	1			5			
Cumberland, Md.	26,074	2								
Danville, Ill.	32,261	7								
Dubuque, Ill.	39,873						1			2
East Chicago, Ind.	28,743	4	2						4	
East Orange, N. J.	42,458	8			1	1			1	
Elgin, Ill.	28,203	4		1					2	1
Everett, Mass.	39,233									
Everett, Wash.	35,486	3								
Fitchburg, Mass.	41,781	7								
Galveston, Tex.	41,863	8							1	3
Green Bay, Wis.	29,353	9								1
Hamilton, Ohio.	40,496	10							1	
Haverhill, Mass.	48,477									2
Jackson, Mich.	35,363	8			1				2	
Kalamazoo, Mich.	48,886	18	1		20				4	
Kenosha, Wis.	31,576	3			2					
Kingston, N. Y.	26,771	9								
Knoxville, Tenn.	38,676		1				3		1	1
La Crosse, Wis.	31,677	13	1						1	1
Lexington, Ky.	41,097	17								3
Lima, Ohio.	35,384	11	2				1		1	2
Lincoln, Nebr.	46,515	11					1			
Long Beach, Cal.	27,587	13	1	1					1	1
Lorain, Ohio.	36,964		1				1		1	

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS— Continued.

City Reports for Week Ended Aug. 11, 1917—Continued.

City.	Population as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabitants—Continued.										
Lynchburg, Va.	32,940	9							1	
McKeesport, Pa.	47,521	11	4				3			
Medford, Mass.	26,234	4			1					
Montclair, N. J.	26,318	6					1			
Nashua, N. H.	27,327	13								2
Newburgh, N. Y.	29,603	9	1		1				3	2
Newport, Ky.	31,927	9					2			
Newton, Mass.	43,715	12	1							2
Niagara Falls, N. Y.	37,353	18								1
Norristown, Pa.	31,401	9								1
Ogden, Utah.	31,404	6	1							
Orange, N. J.	33,080	12					1			2
Pasadena, Cal.	46,450	10			1				1	
Perth Amboy, N. J.	41,185	12							2	
Pittsfield, Mass.	38,629	6	2	1	2		4		3	1
Portsmouth, Va.	39,651	12					1			
Quincy, Ill.	36,798	8								1
Quincy, Mass.	38,136	6	2	1					1	
Racine, Wis.	46,486	8							4	2
Roanoke, Va.	43,284	9	1							1
Rock Island, Ill.	28,926	7								
San Jose, Cal.	38,902						1		2	
Steubenville, Ohio.	27,445	5	1							
Stockton, Cal.	35,358						1		3	1
Superior, Wis.	46,226	5					1			
Taunton, Mass.	36,283	17	1						5	3
Topeka, Kans.	48,726	9								1
Waltham, Mass.	30,570	5			2					
Watertown, N. Y.	29,894				2				2	
West Hoboken, N. J.	43,139	4		1	1		1		3	1
Wheeling, W. Va.	43,377	12			1					
Williamsport, Pa.	33,809		3	1	1					
Wilmington, N. C.	29,892	10								
Winston-Salem, N. C.	31,155		1				3			
Zanesville, Ohio.	30,863								1	
From 10,000 to 25,000 inhabitants:										
Alton, Ill.	22,874	10								4
Beaver Falls, Pa.	13,532	1								
Braddock, Pa.	21,685				2					
Cairo, Ill.	15,794	3								
Clinton, Mass.	13,075	1			1					1
Coffeyville, Kans.	17,548									
Concord, N. H.	22,669	8			1		2			
Galesburg, Ill.	24,276	6			2					
Harrison, N. J.	16,950				2					
Kearny, N. J.	23,539	4			1					
Kokomo, Ind.	20,930	4								1
Long Branch, N. J.	15,395	4	1		3					
Marquette, Wis.	14,610	2					1			
Melrose, Mass.	17,445	3	2				1		1	
Morristown, N. J.	13,284	5								
Muscatine, Iowa.	17,500	2								1
Nanticoke, Pa.	23,126	4					1			
Newburyport, Mass.	15,243				1					
New London, Conn.	20,985	3			1					
North Adams, Mass.	12,019	9								
Northampton, Mass.	19,926	7			2		2		4	2
Plainfield, N. J.	23,805	9								1
Pontiac, Mich.	17,524		2							
Portsmouth, N. H.	11,666						1			
Rocky Mount, N. C.	12,067	3								
Rutland, Vt.	14,831	5					1			1
Sandusky, Ohio.	20,193	9			1					1
Saratoga Springs, N. Y.	13,821	5								
South Bethlehem, Pa.	24,204		1						1	
Steele, Pa.	15,548	2	1							
Washington, Pa.	21,618						1			
Wilkinsburg, Pa.	23,228	3					1			1
Woburn, Mass.	15,969	1								

1 Population Apr. 15, 1910; no estimate made.

FOREIGN.

CHINA.

Examination of Rats—Shanghai.

During the period from June 3 to July 14, 1917, 1,666 rats were examined at Shanghai. No plague infection was found. The last plague-infected rat at Shanghai was reported found May 6, 1916.

Plague-Infected Rats—Hongkong.

During the period from June 17 to 30, 1917, out of 3,709 rats examined at Hongkong, 3 were found plague infected. During the week ended July 7, 1917, 2 plague-infected rats were found at Hongkong out of 2,015 examined.

CUBA.

Communicable Diseases—Habana.

Communicable diseases have been notified at Habana as follows:

Disease.	July 11-20, 1917.		July 21-31, 1917.		Re- main- ing under treatment July 31, 1917.
	New cases.	Deaths.	New cases.	Deaths.	
Diphtheria.....	1	1	2	.....	5
Leprosy.....	.....	.....	.....	.....	10
Malaria.....	11	.....	16	.....	31
Measles.....	8	.....	11	.....	10
Paratyphoid fever.....	4	1	1	.....	3
Scarlet fever.....	.....	.....	1	.....	1
Typhoid fever.....	23	6	29	7	64
Varicella.....	.....	.....	2	.....	2

INDO-CHINA.

Cholera—Plague—Smallpox—March, 1917.

During the month of March, 1917, 41 cases of cholera, 97 cases of plague, and 1,023 cases of smallpox were notified in Indo-China. The cases were distributed by provinces as follows:

Cholera.—Province of Anam, 3 cases; Cambodia, 1 case; Cochin-China, 36 cases; Tonkin, 1 case.

Plague.—Province of Anam, 41 cases; Cambodia, 35 cases; Cochin-China, 20 cases; Tonkin, 1 case.

Smallpox.—Province of Anam, 491 cases; Cambodia, 37 cases; Cochin-China, 461 cases; Kwang-Chow-Wan, 2 cases; Tonkin, 32 cases.

The number of cholera cases occurring during the month of March, 1917, was double that for the preceding month, being 41 as against 20. For the month of March, 1916, the number was 685, of which 457 were reported from the Province of Anam. For March, 1917, only 3 cases were reported in Anam.

The number of cases of plague was the same as for the corresponding month of the year 1916. For the month of February, 1917, the number of plague cases was 101.

The number of smallpox cases reported during March, 1917, was almost double that for the preceding month, being 1,023 as against 593. During the corresponding month of the year 1916 the number of smallpox cases was 266. The increase in the prevalence of smallpox is believed to be due to the discontinuance of vaccination tours throughout the country during the past two years.

ITALY.

Deratization of Vessels—Naples.

Fumigation of vessels to destroy rats was ordered at Naples to be put in force from July 23, 1917, for all vessels having traversed the Suez Canal and destined for ports in the United States, option being given of fumigation at Naples or at United States port of arrival.

MEXICO.

Yellow Fever—Peto, Yucatan.

During the two weeks ended August 11, 1917, six cases of yellow fever were reported at Peto, State of Yucatan, Mexico. The cases occurred in soldiers brought into Yucatan during the past year.

A fatal case of yellow fever was reported at Peto June 23, 1917.¹

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

Reports Received During the Week Ended Aug. 31, 1917.²

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay.....	June 24-30.....	1	1	
Madras.....	do.....	2	1	
Indo-China:				
Provinces.....				Mar. 1-31, 1917: Cases, 41; deaths, 28.
Anam.....	Mar. 1-31.....	3	1	
Cambodia.....	do.....	1	1	
Cochin-China.....	do.....	36	26	
Tonkin.....	do.....	1		
Java:				
West Java.....				May 11-June 28, 1917: Cases, 18; deaths, 6.
Batavia.....	May 11-June 28....	6	2	

¹ Public Health Reports, July 13, 1917, p. 1121.

² From medical officers of the Public-Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER— Continued.

Reports Received During the Week Ended Aug. 31, 1917—Continued.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong.....	June 17-30.....	7	5	
Do.....	July 1-7.....	6	6	
India.....				June 24-30, 1917: Cases, 1,482; deaths, 1,002.
Bombay.....	June 24-30.....	35	37	
Karachi.....	do.....	2	2	
Madras Presidency.....	do.....	33	17	
Indo-China:				
Provinces.....				Mar. 1-31, 1917: Cases, 97; deaths, 70.
Anam.....	Mar. 1-31.....	41	24	
Cambodia.....	do.....	35	33	
Cochin-China.....	do.....	20	12	
Tonkin.....	do.....	1	1	
Java:				
East Java.....				Apr. 23-May 20, 1917: Cases, 11 deaths, 11.
Djocjakarta Residency.....	Apr. 23-May 6.....	1	1	
Kediri Residency.....	do.....	1	1	
Samarang Residency.....	Apr. 23-May 20.....	3	3	
Surabaya Residency.....	do.....	5	5	
Surakarta Residency.....	May 7-20.....	1	1	

SMALLPOX.

Australia:				
New South Wales.....				June 22-July 5, 1917: 48 cases.
Coonabarabran.....	June 22-July 5.....			
Warren district.....	do.....	47		
Canada:				
Ontario—				
Ottawa.....	July 30-Aug. 5.....	1		
China:				Present.
Chungking.....	July 1-7.....			
Dairen.....	do.....	1		
Hankow.....	June 24-30.....	2		
Mukden.....	July 15-21.....			
Chosen (Korea):				
Chemulpo.....	May 1-31.....	1		
India:				
Bombay.....	June 24-30.....	14	4	
Karachi.....	do.....	2	2	
Madras.....	do.....	5	5	
Indo-China:				
Provinces.....				Mar. 1-31, 1917: Cases, 1,023; deaths, 178.
Anam.....	Mar. 1-31.....	491	56	
Cambodia.....	do.....	37	16	
Cochin-China.....	do.....	461	105	
Kwang-Chow-Wan.....	do.....	2		
Tonkin.....	do.....	32	1	
Japan:				
Kobe.....	July 16-22.....	9		
Java:				
East Java.....	May 6-June 17.....	18	1	
Mid-Java.....	May 5-June 10.....	36	3	
West Java.....				May 17-June 28, 1917: Cases, 160; deaths, 23.
Batavia.....	May 17-June 28.....	18	4	
Mexico:				
Maratlan.....	Aug. 1-7.....		7	
Mexico.....	June 8-28.....	69		
Do.....	Aug. 5-11.....	20		
Spain:				
Seville.....	June 1-30.....		6	
Straits Settlements:				
Singapore.....	June 24-30.....	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—
Continued.

Reports Received During the Week Ended Aug. 31, 1917—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Antung.....	July 16-22.....	2		
Egypt:				
Alexandria.....	July 9-15.....	72	27	
Greece:				
Saloniki.....	July 1-14.....		10	
Java:				
East Java.....	May 6-June 17.....	5		
Mid-Java.....				May 5-June 10, 1917: Cases, 21;
Samarang.....	May 5-June 10.....	14	2	deaths, 2.
West Java.....				May 17-June 21, 1917: Cases, 57;
Batavia.....	May 17-June 21.....	44	6	deaths, 6.
Mexico:				
Mexico City.....	June 8-28.....	340		
Do.....	Aug. 5-11.....	105		
Netherlands:				
Rotterdam.....	July 15-30.....	3		
Norway:				
Bergen.....	July 8-14.....	6		
Switzerland:				
Basel.....	July 14-21.....	1		

YELLOW FEVER.

Mexico:				
Yucatan, State—				
Peto.....	July 29-Aug. 11...	6	2	

Reports Received from June 30 to Aug. 24, 1917.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein.....	Apr. 1-May 5.....		8	
Calcutta.....	Apr. 29-June 9.....		335	
Madras.....	Apr. 22-June 9.....	3	3	
Mandalay.....	May 6-12.....		1	
Moulmein.....	May 13-June 2.....		3	
Pakokku.....	Apr. 20-May 5.....		1	
Pegu.....	May 27-June 2.....		1	
Rangoon.....	Apr. 21-June 9.....	30	16	
Indo-China:				
Provinces.....				Feb. 1-28, 1917: Cases, 20; deaths,
Anam.....	Feb. 1-28.....	3		12.
Cambodia.....	do.....	8	6	
Cochin-China.....	do.....	8	6	
Tonkin.....	do.....	1		
Saigon.....	Apr. 23-May 27.....	163	108	
Java:				
East Java.....	Apr. 2-8.....	1		
West Java.....				Apr. 13-19; 1917: 1 case.
Batavia.....	Apr. 13-19.....	1		
Persia:				
Mazanderan Province—				
Amir Kela.....	Feb. 3.....	1		
Barfourouche.....	Jan. 15-17.....	4		
Hamze Kela.....	Jan. 17.....	1		
Machidessar.....	Jan. 31.....	3		
Philippine Islands:				
Manila.....	June 17-23.....	1		
Provinces.....				May 20-June 30, 1917: Cases, 795;
Albay.....	May 20-June 30.....	113	76	deaths, 506. July 1-7, 1917:
Do.....	July 1-7.....	2	1	Cases, 315; deaths, 202.
Ambos Camarines.....	June 3-9.....	2	1	
Batangas.....	June 17-23.....	1	1	
Bohol.....	May 20-June 30.....	368	251	
Do.....	July 1-7.....	66	45	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER— Continued.

Reports Received from June 30 to Aug. 24, 1917—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands—Contd.				
Provinces—Continued.				
Capiz.....	June 3-30.....	62	40	
Do.....	July 1-7.....	19	15	
Cebu.....	June 3-30.....	231	150	
Do.....	July 1-7.....	54	38	
Iloilo.....	July 1-7.....	7	4	
Leyte.....	June 10-30.....	14	5	
Do.....	July 1-7.....	4	4	
Negros Oriental.....	July 1-7.....	4	4	
Rizal.....	June 24-30.....	1	1	
Do.....	July 1-7.....	1	1	
Sorsogon.....	June 3-30.....	196	88	
Do.....	July 1-7.....	82	39	
Tayabas.....	do.....	7	7	
Do.....	July 1-7.....	1	1	

PLAGUE.

Arabia:				
Aden.....	May 3-June 11.....		38	Apr. 8-May 14, 1917: Cases, 69; deaths, 51.
Brazil:				
Bahia.....	June 10-30.....	6	3	
Ceylon:				
Colombo.....	Apr. 8-June 9.....	40	33	
China:				
Amoy.....	Apr. 29-May 5.....			Present and in vicinity.
Hongkong.....	May 13-June 9.....	13	8	
Kwangtung Province—				
Pa-pu district.....	June 2.....			Present.
Egypt:				Jan. 1-June 28, 1917: Cases 564; deaths, 313.
Alexandria.....	June 21-27.....	6	4	
Port Said government.....	Apr. 30-May 19.....	4	3	
Port Said.....	June 25.....	1		
Provinces:				
Fayoum.....	May 11-June 26.....	14	7	
Galioubeh.....	June 28.....	1		
Girgeh.....	May 17.....	1		
Minieh.....	May 12-June 28.....	4	3	
Siout.....	May 12.....	3	1	
Suez government.....	Apr. 30-June 2.....	23	9	
Suez.....	May 12-June 28.....	38	23	
Great Britain:				
London.....	May 3-8.....	2		2 in hospital at port. From s. s. Sardinia from Australian and oriental ports.
India:				Apr. 15-June 9, 1917: Cases, 40,958; deaths, 28,193.
Bassein.....	Apr. 1-June 2.....		42	
Bombay.....	Apr. 22-June 16.....	406	325	
Calcutta.....	Apr. 29-June 2.....		38	
Henrada.....	Apr. 1-May 19.....		33	
Karachi.....	Apr. 22-June 9.....	467	411	
Madras Presidency.....	Apr. 22-June 16.....	268	233	
Mandalay.....	Apr. 8-May 12.....		9	
Moulmein.....	Apr. 1-June 2.....		59	
Myingyan.....	Apr. 1-7.....		1	
Pegu.....	May 27-June 2.....		2	
Rangoon.....	May 15-June 9.....	143	131	
Toungoo.....	Apr. 8-14.....		2	
Indo-China:				
Provinces:				Feb. 1-28, 1917: Cases, 101; deaths, 71.
Anam.....	Feb. 1-28.....	31	15	
Cambodia.....	do.....	57	47	
Cochin-China.....	do.....	13	9	
Saigon.....	Apr. 23-June 3.....	47	25	
Java:				
East Java:				Apr. 2-22, 1917: Cases, 18; deaths, 18.
Surabaya.....	Apr. 2-22.....	13	13	
Surakarta.....	do.....	5	5	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER— Continued.

Reports Received from June 30 to Aug. 24, 1917—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Peru.....				May 16-31, 1917: Cases, 15.
Departments—				
Arequipa.....	May 16-31.....	4		At Mollendo.
Callao.....	do.....	1		At Callao.
Lambayeque.....	do.....	2		At Chiclayo.
Libertad.....	do.....	7		At Salaverry, San Pedro, and Trujillo.
Lima.....	do.....	1		At Lima.
Siam:				
Bangkok.....	Apr. 22-June 2.....	12	11	
Do.....	July 3-23.....	4	3	
Straits Settlements:				
Singapore.....	June 3-16.....	2	1	
Union of South Africa:				
Cape of Good Hope State—				
Glengrey district.....	Aug. 13.....			Present.
Tarka district.....	May 28.....	1	1	At Summerhill Farm.
Queenstown.....	June 6.....	1		
Orange Free State.....				Apr. 16-22, 1917: 1 case; Apr. 9-22, 1917: Cases, 26; deaths, 17.
Winburg district.....	May 28.....		1	

SMALLPOX.

Australia:				
New South Wales.....				Apr. 27-June 21, 1917: Cases, 20.
Brewarrina.....	Apr. 27-June 21.....	6		
Coonabarabran.....	May 25-June 7.....	12		
Quambone.....	Apr. 27-June 21.....	2		
Queensland—				
Thursday Island Quarantine Station.....	May 9.....	1		From s. s. St. Albans from Kobe via Hongkong. Vessel proceeded to Townsville, Brisbane, and Sydney, in quarantine.
Brazil:				
Bahia.....	May 6-June 30.....	4		
Rio de Janeiro.....	do.....	126	31	
Do.....	July 1-14.....	59	8	
Canada:				
Manitoba—				
Winnipeg.....	June 10-16.....	1		
Nova Scotia—				
Halifax.....	June 18-July 7.....	3		
Port Hawkesbury.....	June 17-30.....			Present in district.
Ceylon:				
Colombo.....	May 6-12.....	1		
China:				
Amoy.....	Apr. 29-May 26.....			Present and in vicinity.
Antung.....	May 21-June 24.....	4		
Chungking.....	May 6-June 23.....			Present.
Changsha.....	May 27-June 2.....	5		
Dairen.....	May 13-June 30.....	30	4	
Harbin.....	Apr. 23-May 6.....	7		On Chinese Eastern Ry.
Hongkong.....	May 6-June 16.....	8	7	
Manchuria Station.....	Apr. 23-29.....	1		Do.
Mukden.....	May 27-June 2.....			Present.
Do.....	July 8-14.....			Do.
Shanghai.....	May 21-July 1.....	13	32	Cases foreign: deaths among natives.
Tsitsihar Station.....	Apr. 16-22.....	1		On Chinese Eastern Ry.
Tsingtao.....	May 27-July 7.....	35	7	At another station on railway, 1 case.
Egypt:				
Alexandria.....	Apr. 30-July 1.....	39	9	
Do.....	July 2-8.....	1	2	
France:				
Paris.....	May 6-12.....	1		
Germany:				Mar. 18-Apr. 28, 1917: Cases, 715 in cities and 32 States and districts.
Berlin.....	Mar. 18-Apr. 28.....	106		
Bremen.....	do.....	16		
Charlottenburg.....	do.....	18		
Hamburg.....	do.....	50		
Leipzig.....	do.....	20		
Lübeck.....	do.....	2		
Munich.....	do.....	10		
Stuttgart.....	do.....	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER— Continued.

Reports Received from June 30 to Aug. 24, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay.....	Apr. 22-June 16...	149	59	
Calcutta.....	Apr. 29-May 26.....		12	
Karachi.....	Apr. 22-June 9.....	20	5	
Madras.....	Apr. 22-June 16.....	78	43	
Rangoon.....	Apr. 15-June 9.....	30	4	
Indo-China:				
Provinces.....				Feb. 1-28, 1917: Cases, 593; deaths, 62.
Anam.....	Feb. 1-28.....	297	7	
Cambodia.....	do.....	36	1	
Cochin-China.....	do.....	193	53	
Tonkin.....	do.....	67	1	
Saigon.....	Apr. 27-June 10.....	199	63	
Italy:				
Turin.....	May 21-June 24.....	32	12	
Japan:				
Kobe.....	May 27-July 8.....	56	16	
Nagasaki.....	May 28-June 3.....	1		
Osaka.....	May 16-July 5.....	177	55	
Yokohama.....	May 27-July 1.....	1	1	
Java:				
East Java.....	Apr. 2-29.....	11	1	
Mid-Java.....	Apr. 1-21.....	16		
West Java.....				Apr. 13-May 10, 1917: Cases, 46; deaths, 7.
Batavia.....	Apr. 13-May 3.....	11	2	
Mexico:				
Mazatlan.....	July 11-17.....		2	
Mexico City.....	June 3-30.....	162		
Monterey.....	June 18-24.....		24	
Vera Cruz.....	July 1-7.....	1		
Philippine Islands:				
Manila.....	May 13-June 9.....	6		Varioloid.
Portugal:				
Lisbon.....	May 13-June 30.....	14		
Portuguese East Africa:				
Lourenco Marques.....	Mar. 1-Apr. 30.....		2	
Russia:				
Archangel.....	May 1-June 28.....	23	2	
Petrograd.....	Feb. 18-June 9.....	495		
Riga.....	Mar. 11-June 2.....	4		Jan. 1-Mar 31, 1917: Cases, 9.
Vladivostok.....	Mar. 15-21.....	23	7	
Siam:				
Bangkok.....	June 9-23.....	6	3	
Spain:				
Madrid.....	May 1-June 19.....		4	
Seville.....	May 1-31.....		5	
Valencia.....	June 3-23.....	5		
Do.....	July 1-7.....	2		
Straits Settlements:				
Penang.....	Mar. 18-June 23.....	6	3	
Sweden:				
Malmö.....	Apr. 22-28.....	1		
Stockholm.....	May 20-June 23.....	2	1	
Tunisia:				
Tunis.....	June 2-8.....	2		
Turkey in Asia:				
Trebizond.....	Feb. 25-Apr. 13.....		15	
Union of South Africa:				
Johannesburg.....	Mar. 12-24.....	4		
Uruguay:				
Montevideo.....	May 1-31.....	2		
Venezuela:				
Maracaibo.....	June 18-July 8.....		8	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER— Continued.

Reports Received from June 30 to Aug. 24, 1917—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers.....	June 1-30.....	5	3	
Austria-Hungary:				
Austria.....	Oct. 22-Dec. 17.....	634		Oct. 22-Dec. 17, 1916: Cases, 2,371.
Bohemia.....	do.....	809		
Galicia.....	do.....	47		
Lower Austria.....	do.....	617		
Moravia.....	do.....	16		
Silesia.....	do.....	243		
Styria.....	do.....	5		
Upper Austria.....	do.....			
Hungary.....	Feb. 19-Mar. 25.....	83		Feb. 19-Mar. 25, 1917: Cases, 1,381.
China:				
Antung.....	June 25-July 1.....	3		
Do.....	July 9-15.....	2	1	
Hankow.....	June 9-16.....	1		
Tientsin.....	June 17-23.....	1		
Tsingtao.....	May 20-July 7.....	4		
Egypt:				
Alexandria.....	Apr. 30-July 1.....	1,648	478	
Do.....	July 17-23.....	73	23	
Great Britain:				
Cork.....	June 17-23.....		1	
Greece:				
Saloniki.....	May 13-June 30.....		32	
Japan:				
Nagasaki.....	June 11-24.....	4		
Do.....	July 9-22.....	12	1	
Java:				
Mid-Java.....	Apr. 1-30.....	7	2	
West Java.....	Apr. 13-May 10.....	22		Apr. 13-May 10, 1917: Cases, 86.
Batavia.....				
Mexico:				
Mexico City.....	June 3-30.....	431		
Netherlands:				
Rotterdam.....	June 9-23.....	3	2	
Portuguese East Africa:				
Lourenco Marques.....	Mar. 1-31.....	1		
Russia:				
Archangel.....	May 1-June 28.....	4		
Petrograd.....	Feb. 18-June 9.....	126	3	
Riga.....	May 31-June 2.....	2		Jan. 1-31, 1917: 1 case.
Vladivostok.....	Mar. 29-May 21.....	5		
Spain:				
Almeria.....	May 1-31.....		5	
Madrid.....	do.....		2	
Switzerland:				
Basel.....	June 17-23.....	1		
Do.....	July 8-14.....	2	1	
Trinidad.....	June 4-9.....	2		
Tunisia:				
Tunis.....	June 30-July 6.....		1	

YELLOW FEVER.

Mexico:				
Yucatan, State—				
Peto.....	June 23.....	1	1	In person recently arrived from Mexico City.